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# Overproduction Brings Crude Cuts

**Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.**

## Eastern Fields and Santa Fe Springs Given a Costly Lesson. Production Increases Elsewhere

By James McIntyre

**Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.**

The value of the 80,000 barrels daily production of Pennsylvania Grade crude oil was reduced $20,000 a day by a 25-cent price cut effective Friday, May 16, and the value of the 128,500 barrels of crude being produced in Santa Fe Springs was reduced between $90,000 and $100,000 a day by a cut in the price of Santa Fe Springs crude, ranging from 75 cents to 90 cents per barrel. Overproduction in the two fields above named was altogether responsible for the decline in prices.

Notwithstanding warnings and the fulfillment of the warnings in two of the big producing areas, production continued upward last week and is within 20,220 barrels of being equal to the daily average production one year ago.

When this was written there was hope of a satisfactory adjustment in California where efforts are being made to bring production below 600,000 barrels a day. Nature has stepped in in the Smackover, Arkansas, Field, in the form of a severe flood which will slow that field down this week, and operators in the Bradford and Allegany Fields are expected to agree on a shutdown of 36 hours a week to relieve overproduction in that high grade oil area. On the other hand southeastern New Mexico is running more oil to the pipe lines than ever before: a number of pools in Texas, Oklahoma and Kansas are becoming more and more a menace to a stabilized price situation.

To add to the seriousness of the situation unusually cold and rainy weather over a wide area in the United States has slowed up the sales of gasoline, down the line from refiner to consumer.

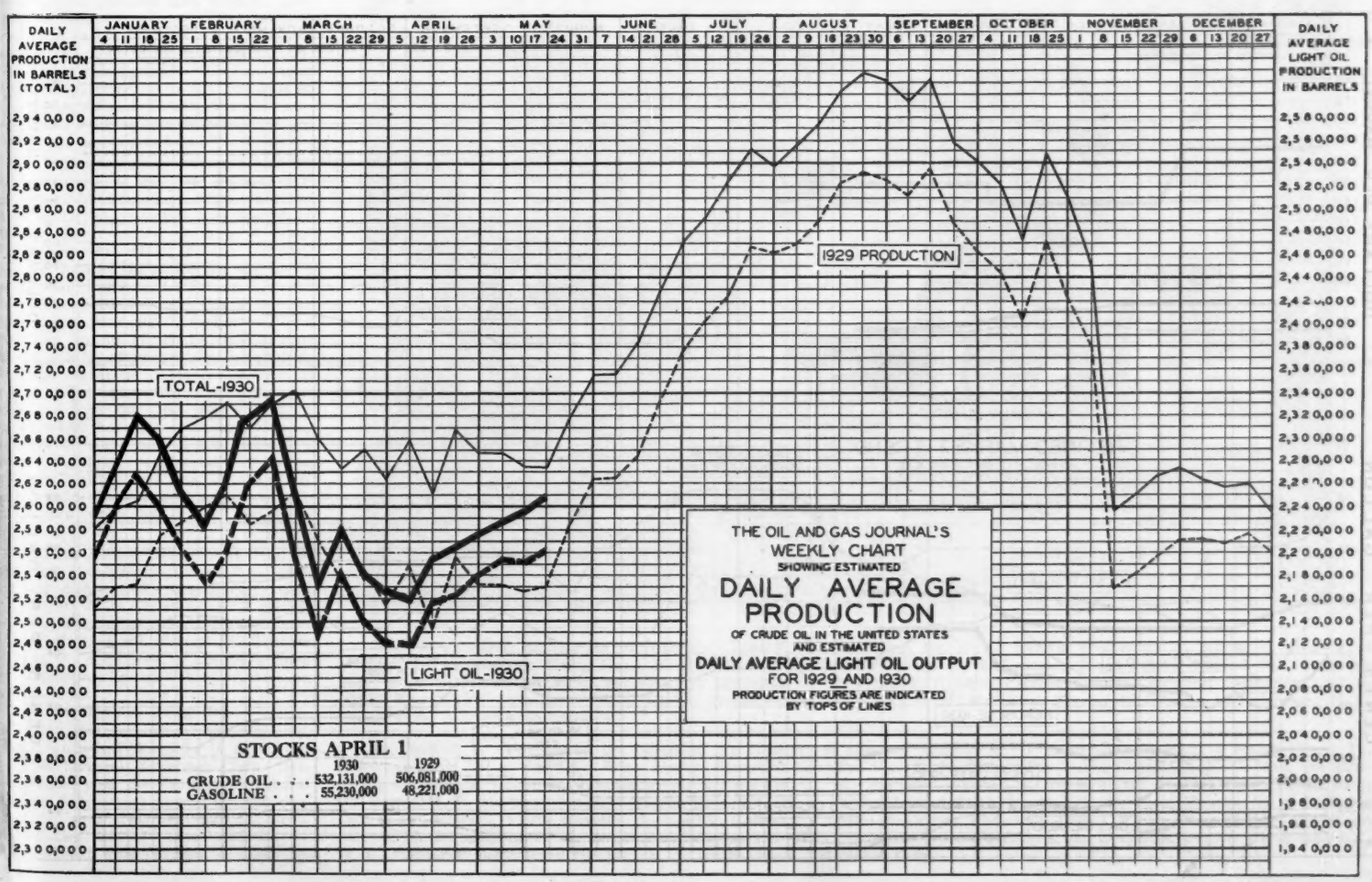
The oil market is entirely in the hands of a few producers. We again call particular attention to this year's and last year's production curve on this page. There is no doubt that if production is not curbed the dose administered to producers in the most easterly and the most westerly fields in this country will be handed to the great Mid-Continent and Rocky Mountain areas. It would be an industrial tragedy if a few producers lower the value of the production of the United States $650,000 a day, when a little common sense would put it on an even sounder basis than it now rests upon.

### PRODUCTION IN THE UNITED STATES

**Estimated daily average production of light and heavy gravity oil in the United States for week ended May 17, 1930, and a comparison with the previous week follows:**

| | May 17 | | May 10 | |
|---|---|---|---|---|
| | Light | Heavy | Light | Heavy |
| **Oklahoma—** | | | | |
| Oklahoma City | 114,740 | ..... | 113,225 | ..... |
| St. Louis-Pearson | 45,785 | ..... | 44,410 | ..... |
| Seminole | 201,975 | ..... | 195,535 | ..... |
| Northern miscellaneous | 239,080 | ..... | 242,115 | ..... |
| Southern fields | 57,400 | ..... | 57,350 | ..... |
| Total Oklahoma | 658,980 | ..... | 652,635 | ..... |
| **West Texas—** | | | | |
| Hendricks | 76,125 | ..... | 78,395 | ..... |
| Yates | 118,562 | ..... | 119,435 | ..... |
| Remainder | 121,828 | ..... | 119,943 | ..... |
| Total West Texas | 316,515 | ..... | 317,773 | ..... |
| North Louisiana | 35,650 | 5,420 | 35,750 | 5,380 |
| Arkansas | 17,370 | 40,240 | 17,625 | 40,225 |
| North Central Texas | 139,836 | ..... | 140,300 | ..... |
| Texas Panhandle | 104,182 | ..... | 103,498 | ..... |
| East Central Texas | 40,424 | ..... | 39,000 | ..... |
| Kansas | 130,975 | ..... | 127,870 | ..... |
| Total Mid-Continent area | 1,443,932 | 45,660 | 1,433,451 | 45,605 |
| Gulf Coast | ..... | 201,720 | ..... | 200,088 |
| Southwest Texas | ..... | 73,534 | ..... | 70,579 |
| Eastern | 139,000 | ..... | 140,000 | ..... |
| Rocky Mountain area | 77,787 | ..... | 72,968 | ..... |
| **California—** | | | | |
| Santa Fe Springs | 128,500 | ..... | 134,000 | ..... |
| Long Beach | 99,000 | ..... | 99,750 | ..... |
| Huntington Beach | 28,250 | ..... | 28,250 | ..... |
| Elwood | 45,000 | ..... | 45,500 | ..... |
| Ventura Avenue | 50,000 | ..... | 48,750 | ..... |
| Seal Beach | 23,500 | ..... | 23,500 | ..... |
| Remainder of State | 171,000 | 85,000 | 170,000 | 85,000 |
| Total California | 545,250 | 85,000 | 549,750 | 85,000 |
| Total United States | 2,205,969 | 405,914 | 2,196,169 | 401,272 |
| Grand total | 2,611,883 | | 2,597,441 | |

**Total Increase, 14,442 Bbls.; Light Oil Increase, 9,800 Bbls.**



# Weather Dominates Gasoline Market

## Mid-Continent Refiners Expect Demand to Improve With More Settled Conditions. Other Products Sluggish

By C. O. Willson

The general heaviness which has characterized the Oklahoma (Group 3) market since late April entered the fourth week on Monday and Tuesday with no indications of immediate improvement. Except for special products the entire refinery list appeared to be laboring under an unsatisfactory demand with considerable selling pressure coming from a few refiners anxious to move substantial quantities of one or more products before the end of the mouth.

In regard to gasoline a somewhat panicky condition developed among a few sellers. Brokers who bought over May as low as 6¾ cents and as high as 7¼ cents in the expectation of an advancing market in two or three cases at least were offering to take losses in their long purchases in order to secure part of the spot business that was available. A few refiners in Oklahoma and adjoining areas were also offering gasoline with price concessions. While the quantity of this distress material is not large compared to the volume of business being handled on contracts in an orderly manner, it is dominating the spot market and will continue to do so until such time as it is removed by the buyers.

**Other Products Lower**

The remaining products in Oklahoma were lowered when any changes were made. Sales of the least desirable grades of fuel oil were made in Oklahoma as low as 50 cents a barrel and sales of Oklahoma gas oil at 2⅛ cents were reported. Furnace oils were holding their own with many inquiries from buyers who desire to purchase on a contract basis with shipments to start in the late summer.

The 4-cent level in Oklahoma kerosene has been reached, several sales of specification 41-43 water white material having been made at that price during the past week. It was believed that the product would become attractive to exporters when it reached the 4-cent level but no buying has developed in Oklahoma. It is reported that the export grade has been offered in North Texas to buyers on a basis which would net Oklahoma refiners 3⅝ to 3¾ cents. Some kerosene in Louisiana was sold for export last week. Refiners in that area have a slightly lower freight rate than North Texas for coastal shipment.

**Marking Time**

As expressed by one large Oklahoma refiner most of the sellers are "marking time" while waiting some positive indication as to how long the present slump will continue. While the trade generally is still optimistic little improvement is anticipated over the remainder of the month.

A majority blame the weather for all the ills of the gasoline market. Oklahoma and some of the adjoining states were visited with heavy rains resulting in flooded conditions which curtailed motor travel and gasoline consumption. Weather conditions were also unfavorable at many middle western points.

A disturbing factor of the past week which has been bearishly interpreted by some not only in regard to the immediate market but also through the summer months, was the reported sale of large quantities of West Texas gasoline by a major refining organization. This gasoline which was better than the U. S. Motor grade was sold on a Group 3 basis of 6½ cents. Whether this was the temporary dumping of excess gasoline for which there was no other ready market or marks the permanent entry of this company as a competitive factor in the Mid-Continent spot market is yet to be determined.

Those in constant touch with the jobber situation in the middle western states are in agreement that the open market in Mid-Continent and Middle West does not need additional quantities of gasoline thrown on the market from new sources. The spot jobber demand through the sale of properties and through the various types of refiner-jobber contracts has been reduced to the point where it is not sufficient to readily absorb the material available from refiners who have no regular outlets.

The active expansion programs of the

(Continued on Page 183)

### REFINED MARKET BAROMETER

Little uniformity in refinery tank car markets was shown in reports from scattered refining areas. With favorable weather the eastern gasoline market continues to show improvement while the Middle West and Mid-Continent was sluggish, a development for which adverse weather conditions were held partially responsible. The California gasoline market was unsettled, reflecting a crisis in the crude oil situation which has already brought substantial price reductions in one large producing area. No improvement in kerosene was reported in any area. Fuel oil prices were steady in the coastal areas but in other sections the market was considered generally weak. Natural gasoline prices were lower in the Mid-Continent and shared the uncertainty of the refinery market on the West Coast. The further reduction in Pennsylvania crude oil prices resulted in lower prices on several grades of steam refined stocks and neutral oils at several eastern refineries. Wax continues easy.

**Mid-Continent**—Conditions were not uniform in the several refining groups but little strength was apparent in any product. The gasoline demand has not increased as expected and with a greater output the market has softened. Natural gasoline prices lower. Kerosene prices lower. Fuel oil, distillate and gas oil inactive. No change in lubricants.

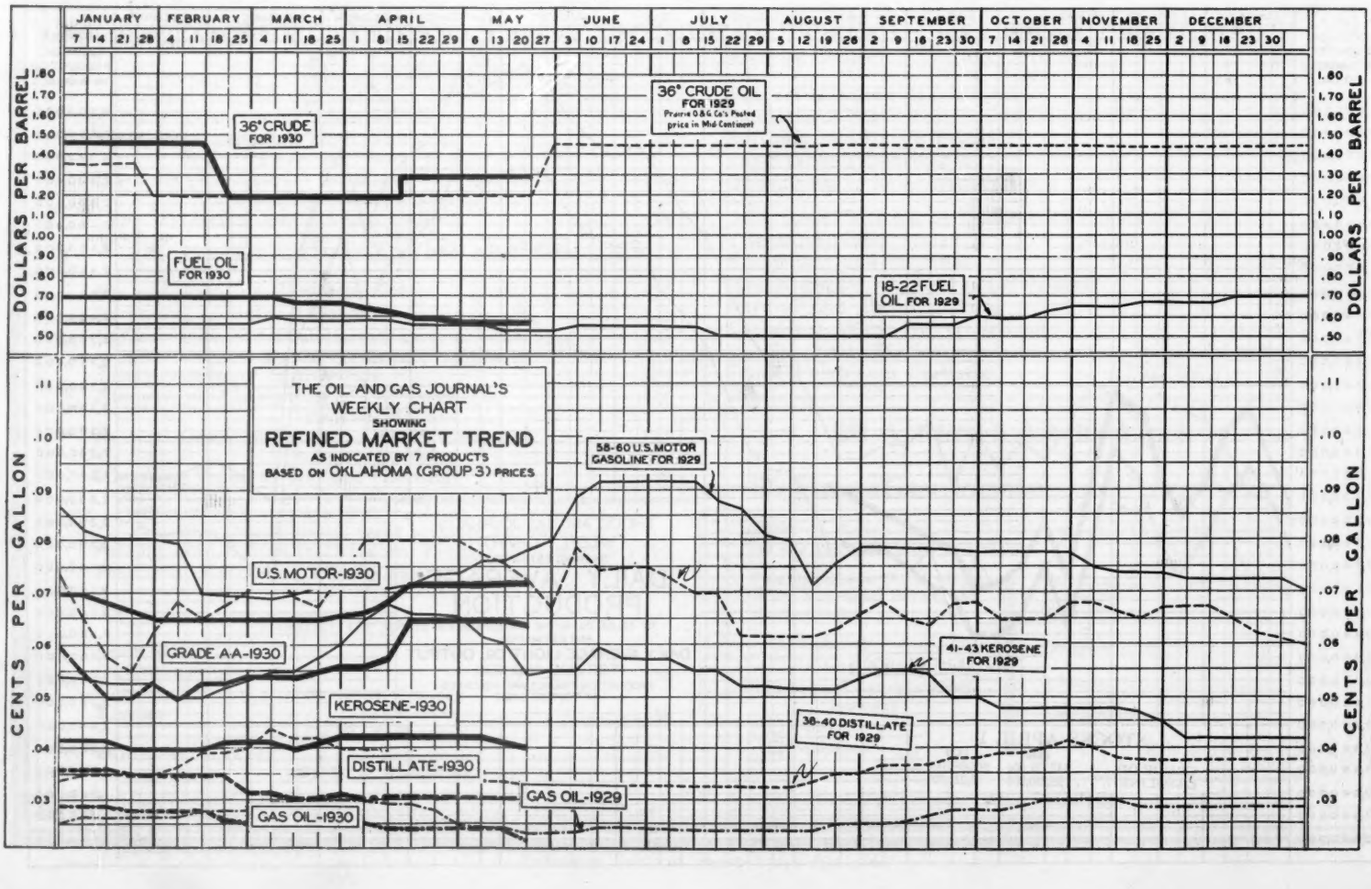
**East Coast**—Gasoline market strong. Cylinder stocks and wax prices slightly lower. No price change in other products. Good movement of fuel oil.

**Pennsylvania**—Price reductions in Pennsylvania grade crude oils reflected in lower prices on several grades of cylinder stocks. Fuel oil prices lower. Kerosene slow. Fair demand for gasoline.

**California**—Refinery gasoline and natural gasoline prices unsettled because of threatened overproduction due to critical crude oil situation. Fuel oil low.

**Chicago**—Refinery gasoline demand and prices lower. Kerosene prices lower. Little activity in other products.

**Gulf Coast**—Pale and red oils unchanged. Fuel oil steady. Gasoline weak.



# Gasoline Meetings Largely Attended

## Membership of the Natural Gasoline Association of America Urged to Continue Co-operative Work. Supply Men Act as Hosts

By W. T. Ziegenhain

The ninth annual convention of the Natural Gasoline Association of America opened at the Mayo Hotel, Tulsa, on Tuesday with an unusually large attendance. Frank L. Chase, of the Lone Star Gas Co., chairman at the morning session, pointed to this fact as simply another indication of the co-operative spirit which has led this branch of the oil industry to its present strong position.

"Giving freely of your ideas has permitted a substantial growth yearly and the exchange of knowledge among us in these meetings has been of permanent benefit," summarized Mr. Chase's plea for an open discussion of the paper which followed.

Following the opening address, Dr. E. R. Lederer, of the Texas Pacific Coal & Oil Co., president of the association, reviewed the work of the past year and showed wherein the research work carried on by the association and the co-operative spirit which has been prevalent among the members has paved the way for the general acceptance of natural gasoline and natural gasoline products on the part of refiners and the public. After citing current statistics, Doctor Lederer explained that stocks and production have been kept in balance with consumption and prices have been reasonably stabilized but along with this review of the favorable showing in the past, he carried a warning that increased production from the Oklahoma City Field, the Panhandle of Texas and West Texas may cause some concern by late fall.

He urged a continuation of the present efforts to hold production within the requirements while at the same time, continue to expand the number of products from natural gasoline and develop markets for these products. Bottled gas was taken as an example of the products referred to. Regarding this product Mr. Chase later commented: "A great many of us have entered into the business of manufacturing and distributing this material and we have all probably learned much from it, good and bad."

The experiments now being made by the association, to correlate data on airplane performance when using different blends of natural gasoline was lauded by Doctor Lederer as the one way to determine where the efforts of the industry must be directed in satisfying the needs for airplane fuels in the future. At the same time reference was made to the work being done by the specifications committee in an effort to find a convenient means of accurately designating the blending value of their product to refiners. The committee is still at work trying to iron out the few remaining factors which have met with objection on the part of some within the committee itself. Further consideration of these new specifications was given in the afternoon session following a report of the committee's work by G. M. Davidson, chairman.

Following Doctor Lederer's address, he appointed a committee to nominate officers and directors for the coming year: E. L. Peck, of the Empire Oil & Refining Co., was named chairman with R. M. McCalley, of the Forrest E. Gilmore Co., and W. A. Melton, of the Deep Rock Oil & Refining Co., as other members on the committee.

### California Delegation

The California delegation was applauded when introduced by R. C. Wheeler of the General Petroleum Corp. Several members of the California Natural Gasoline Association appear on the program. It was explained that the problems of the industry there and in the Mid-Continent were common in many respects and the new Oklahoma City Field, with its high rock pressure will probably call for an introduction of several California practices in the Mid-Continent.

As chairman, Mr. Chase called attention to Dr. G. G. Brown's book made available, covering his work at the University of Michigan as director of research for the association. This book includes the experimental data intended to portray the relation between engine performance and the physical tests on the motor fuel, a work accepted by the industry as the most complete investigation made on this subject. Mr. Chase said these books were available from the association at a nominal charge.

### Committee Reports

The reports from the respective committees were then read and that of T. R. Goebel, head of the gas contracts division of the Skelly Oil Co. and chairman of the association's committee, gave a brief summary of the work being done. He explained that the committee was about ready to present a standardized contract for the approval of the association. He also said the contract, in its present form, is being successfully used by a few companies and the results have been encouraging.

M. E. Foster, manager of tank car sales for the Phillips Petroleum Co. and chairman of the committee of sales managers made brief mention of the sales managers' position in the past and present. In regard to prices he said the companies were following the course tending to stabilize the market as near in relation to the refinery gasoline market as practicable. He pointed out that 95 per cent of the products of the natural gasoline industry were sold to refiners and that natural gasoline sales managers can not expect to get more than a reasonable differential between the refinery gasoline price and that of natural gasoline. On the other hand there is sufficient storage available and production may be controlled closely enough to eliminate the practice of dumping at ruinous prices. He also pointed out the need for continuing the co-operative efforts among manufacturers and pointed to the probable large increase in production which may result late in the fall as the Oklahoma City Field, West Texas and the Panhandle are more intensively developed. Emby Kaye, of the Skelly Oil Co. and chairman of the publicity committee, made a brief report. Following this Mr. Kaye extended an invitation to the association members to attend the meeting of the Mid-Continent division of the American Petroleum Institute to be held on Friday and Saturday, immediately following the Natural Gasoline association meetings.

The first paper read in the afternoon was that of A. J. Schlosser, head of the natural gasoline plants for the Barnsdall Oil Co. He presented a complete summary of cost data taken from actual plant results in the Mid-Continent and compared these data with similar data obtained from California on operations there. Considerable discussion followed as the manufacturing cost in California was substantially below the cost of manufacture in the Mid-Continent. It was pointed out that the cost in California is approximately 3½ cents while the Mid-

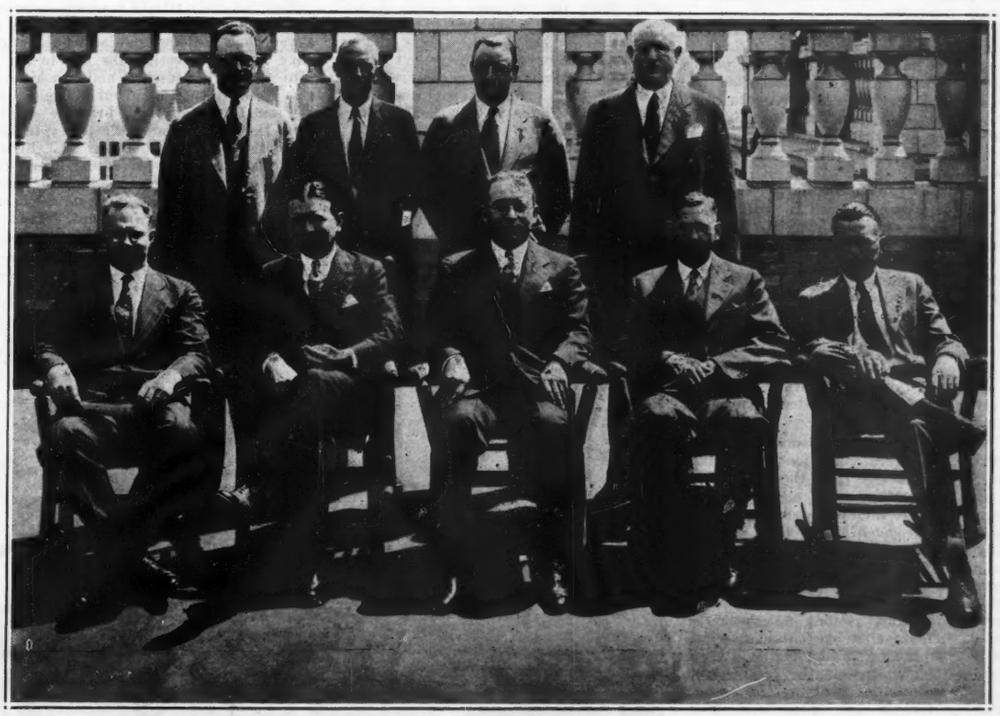
(Continued on Page 181)

**CONVENTION PAPERS**

The following papers presented at the annual meeting of the Natural Gasoline Association of America appear in this issue:


| | Page |
|---|---|
| A. J. Schlosser | 54 |
| O. Weaver | 54 |
| Dr. E. R. Lederer | 86 |
| M. H. Nolan | 169 |
| W. K. Warren | 110 |
| Dr. G. G. Brown | 133 |
| E. W. Zublin | 182 |


### OFFICERS AND DIRECTORS AT ANNUAL CONVENTION



Natural Gasoline Association of America. Seated (left to right) Dr. G. G. Brown, University of Michigan, director of research for association; Emby Kaye, Skelly Oil Co., vice president; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co., president; A. J. Schlosser, Barnsdall Oil Co., vice president; R. C. Wheeler, General Petroleum Corp., director. Standing (left to right) Ray Miller, secretary; W. N. Corbet, Eagle Picher Lead Co.; R. M. McCalley, Forrest E. Gilmore Co., director; F. L. Chase, Lone Star Gas Co., director.

In addition to those named the following are directors of the association: C. W. Anderson, Chestnut & Smith Corp.; W. Baker, Sinclair Oil & Gas Co.; Earle Derby, Standard Gasoline Co.; E. R. Filley, The Texas Company; F. C. Hall, the Henderson Co.; R. H. Hargrove, Louisiana Gas & Fuel Co.; R. M. McCalley, Forrest E. Gilmore Co.; W. A. Melton, Deep Rock Oil Corp.; M. E. Mockley, Amerada Petroleum Corp.; R. N. Parks, United Fuel Gas Co.; E. L. Peck, Empire Oil & Refining Co.; M. F. Powers, Victor Gasoline Co.; J. A. Rafferty, Carbide & Carbon Chemicals Corp.; F. E. Rice, Phillips Petroleum Co.; O. H. Schoenwald, L. H. Wentz, oil division; George A. Shaner, Carter Oil Co.; E. A. Titsworth, Prairie Oil & Gas Co.; D. C. Williams, Continental Oil Co.; S. S. Smith, Shell Petroleum Corp.

# Gasoline Plants at Oklahoma City

## High Rock Pressure Alters Operations. Production Near Quarter Million Gallons Daily With Additional Increases Assured

By W. T. Ziegenhain

Natural gasoline production has been more than trebled in the Oklahoma City Field since the first of this year and the present output is close to 250,000 gallons daily. This will be greatly increased at such a time as the present crude oil curtailment program is lifted and will show a gradual increase as the field is extended. At present there are approximately 218 oil producing wells, 250 wells drilling and there are 50 rigs and locations made. Practically every one of these producing wells is making a large volume of gas. There are two additional wells which are producing gas only. Other gas wells have been drilled at scattered points in the field and were temporarily stopped above the oil level in order to supply gas as fuel in drilling other wells. These wells were then drilled deeper.

### Proration Agreement

At present, oil production in the field is being held to within 16 ⅔ per cent of its estimated potential daily output. The potential production has been set at more than 1,000,000 bbls. daily. This curtailment program is based on the ability of the present pipe lines to move the oil and there is little question but that a continuation of a curtailment program, essentially the same as the present one, will be agreed upon during June to follow the expiration of this agreement on June 30. If any increase in the production of the field is agreed upon at that time, a proportionate increase in the gasoline production will probably be realized shortly thereafter.

The present natural gasoline plants are, as a group, capable of handling efficiently, only the gas now available and plant capacities will have to be increased as the oil production is increased. In several cases the present plants are already inadequate even under the proration agreement and will be increased in size immediately.

### Lean Gas

There has been no rush to build gasoline plants in the Oklahoma City Field because every factor points to the need of "large scale" operations in order to make their operation profitable. The gas contains relatively little gasoline and the actual recovery will run slightly less than one-half gallon per 1,000 feet. Results of tests by the charcoal method show recoveries all of the way from .2 to .5 gallon, further indicating the relatively low yield to be expected from processing the gas.

### High Rock Pressure

There are several conditions that make this field distinctive from the standpoint of natural gasoline plant operation and because of these factors, processing methods have been modified from those generally used throughout the Mid-Continent. One of the factors which makes this field unusual in the Mid-Continent is the high rock pressure exerted. Casinghead pressures around 2,200 pounds have been recorded. This factor has eliminated the use of compressors in the plants except to raise the pressure on the residue gas to force it into the field fuel lines, gas mains or for gas lift operations. The field fuel lines are operated between 125 to 175 pounds pressure and the pipe lines of the gas companies purchasing the gas for outside distribution are being operated at near 350 pounds. General plant practices call for much lower pressures than these. The gas is generally processed through the absorbers at 30 to 40 pounds pressure and then the residue gas is recompressed to 300 to 350 pounds for gas lift purposes or to the pressure carried on the fuel lines. This is an uneconomical cycle and attempts are being made to operate the gasoline plants at higher absorber pressures. In another case the reduction of the gas pressure on the inlet to the gasoline plant is being utilized to stabilize the crude. No doubt other developments will result in an effort to better utilize the natural pressure available.

**Natural Gasoline Plant Operations in the Oklahoma City Field**

| Company | Location | Type | Max. gas cap. cu. ft. daily | Present daily gaso. prod. |
|---|---|---|---|---|
| I. T. I. O. | Bodine, SE, Sec. 24-11-3w | Abs. & Comp. | 50,000,000 | 15,000 |
| I. T. I. O. | Button, SW, Sec. 19-11-2w | Abs. & Comp. | 50,000,000 | *50,000 |
| I. T. I. O. | Verne, SE, Sec. 13-11-3w | Abs. & Comp. | 50,000,000 | 15,000 |
| I. T. I. O. | Sudick, SW, Sec. 31-11-2w | Comp. | 10,000,000 | Operate June 1 |
| I. T. I. O. | Trosper, SE, Sec. 11-11-3w | Comp. | 10,000,000 | Operate July 1 |
| I. T. I. O. and Cromwell-Franklin Interests | Farley, NW, Sec. 19-11-2w | Abs. & Comp. | 50,000,000 | 15,000 |
| I. T. I. O. and Cromwell-Franklin Interests | Trosper, SE, Sec. 12-11-3w | Abs. & Comp. | 50,000,000 | Operate July 15 |
| Phillips | SW, Sec. 32-11-2w | Abs. | 50,000,000 | 20,000 |
| Phillips | SW, Sec. 1-11-3w | Abs. | 50,000,000 | Operate Aug. 1 |
| Shell | Petty, NE, Sec. 30-11-2w | Abs. | 50,000,000 | 13,000 |
| Wirt Franklin | Lowry, Sec. 12-11-3w | Abs. | 40,000,000 | 12,000 |
| Sinclair | NW, Sec. 30-11-2 | Abs. | 100,000,000 | *65,000 |
| Amerada | SE, Sec. 30-11-2w | Abs. | 40,000,000 | *20,000 |
| Coline | Olds, Sec. 24-11-3 | Abs. | 7,500,000 | 20,000 |

*Includes rerun gasoline.

### I. T. I. O. Tries New Hook-up

One means of utilizing this pressure will be described here. Near the Verne plant of the Indian Territory Illuminating Oil Co. four high pressure and one low pressure separators have been set up with which the company expects to materially reduce the volume of gas processed through the gasoline plant and at the same time expects to increase the production. The accompanying picture shows the four high pressure separators in a line and off to the left is the low pressure separator.

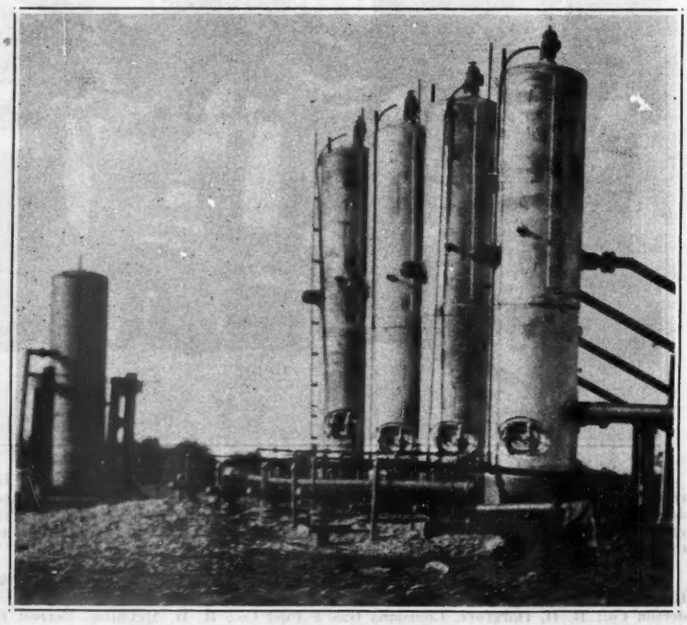
Three other batteries of separators are being added by the Indian Territory Illuminating Oil Co. in other sections of the field.

This installation will handle the production from four wells, the crude and the gas going into the separators at about 300 pounds. The lines from the wells join near the separators into a common header. The high pressure separators operate in parallel and because the separation of the oil and gas is effected at a pressure of 300 pounds, all of the normally recoverable gasoline remains in the crude as a liquid and the gas taken off of the high pressure separators is practically dry. This is released into the field fuel lines or goes into the gas mains for outside distribution.

This not only effects a rather complete separation of the gasoline and the gas at a very low cost but minimizes the work done in recompressing the gas to get it into the high pressure mains which in this case are held at about 300 pounds.

From these four high pressure separators, the oil is run to the low pressure separator. This operates at slightly above atmospheric pressure. Here the more volatile fractions readily distill off and carry with them a portion of the less volatile gasoline fractions. Thus it is thought, that after the operation settles down to a routine the effect of this will be to remove some of the very volatile fractions from the crude. If this results, storage losses will be correspondingly reduced on the crude while its refining value will not be affected.

An elaborate system of relief valves has been installed on the high pressure separators and a picture of a portion of it is shown in the accompanying illustration. It includes four Neilan-Schumacher pilot operated automatic valves and the pressure has been reduced to the pilots through a series of three reducing valves. The two welded reservoirs ahead of the respective reducing valves may be seen in the middle of the picture.



*Battery of four high pressure and one low pressure separators used by the Indian Territory Illuminating Oil Co. on Verne lease in the Oklahoma City Field. The gas leaves the high pressure separators at 300 pounds and is practically dry. The crude then goes into the low pressure separator and the gases which distill off at the lower pressure are processed through the gasoline plant.*

### High Pressure on Absorbers

Another means by which the naturally high rock pressure has been utilized may be seen at the Amerada's Kinter plant. The gas is taken from the low pressure traps and processed through the absorbers at about 90 pounds pressure, instead of the 30 to 40 pounds ordinarily carried. This practically doubles the amount of gas processed through the plant and the production of gasoline has been correspondingly increased.

### Rerun Gasoline Units

The Oklahoma City Field has brought about another new development in the Mid-Continent natural gasoline industry through the use of "rerun" units. There are three of these units in the field, one of them is located at the Indian Territory Illuminating Oil Co.'s Button plant, another at the Sinclair plant and the third in the Amerada's plant. These three units combined have been making about 75,000 gallons of rerun gasoline daily and this volume represents a large portion of the total gasoline production in the field.

These rerun plants are simply distillation and rectifying units that operate rather independently from the natural gasoline plants. Their function is to fractionate to endpoint the large accumulation of "drip" or "casinghead" resulting from the high pressures maintained on the lines. In most cases, the raw gasoline comes into the plant from the traps containing less than 8 per cent material distilling above 250° F. In other words, on rerunning to make 375 endpoint gasoline, a yield of 92 per cent is shown with less than 8 per cent passing through as residue. The gasoline finds a ready sale either as a special natural gasoline or as a special motor fuel. The residue is sold as a light fuel or pumped to crude storage.

### Effect of Proration

Proration of oil production has meant a proration of natural gasoline production schedules for the individual wells have often made natural gasoline plant superintendents keep late hours. Each well yields such a large amount of gas and so few wells are hooked on to each gasoline plant that any change in the gas flow from any well unbalances the plant's operation. While this condition is less pronounced than several months ago due to the fact the number of connections have been increased, it will be difficult to settle down to a routine operation in the plants until the companies feel justified in bringing the capacity of their plants more in line with the potential production of gas from the wells being served.

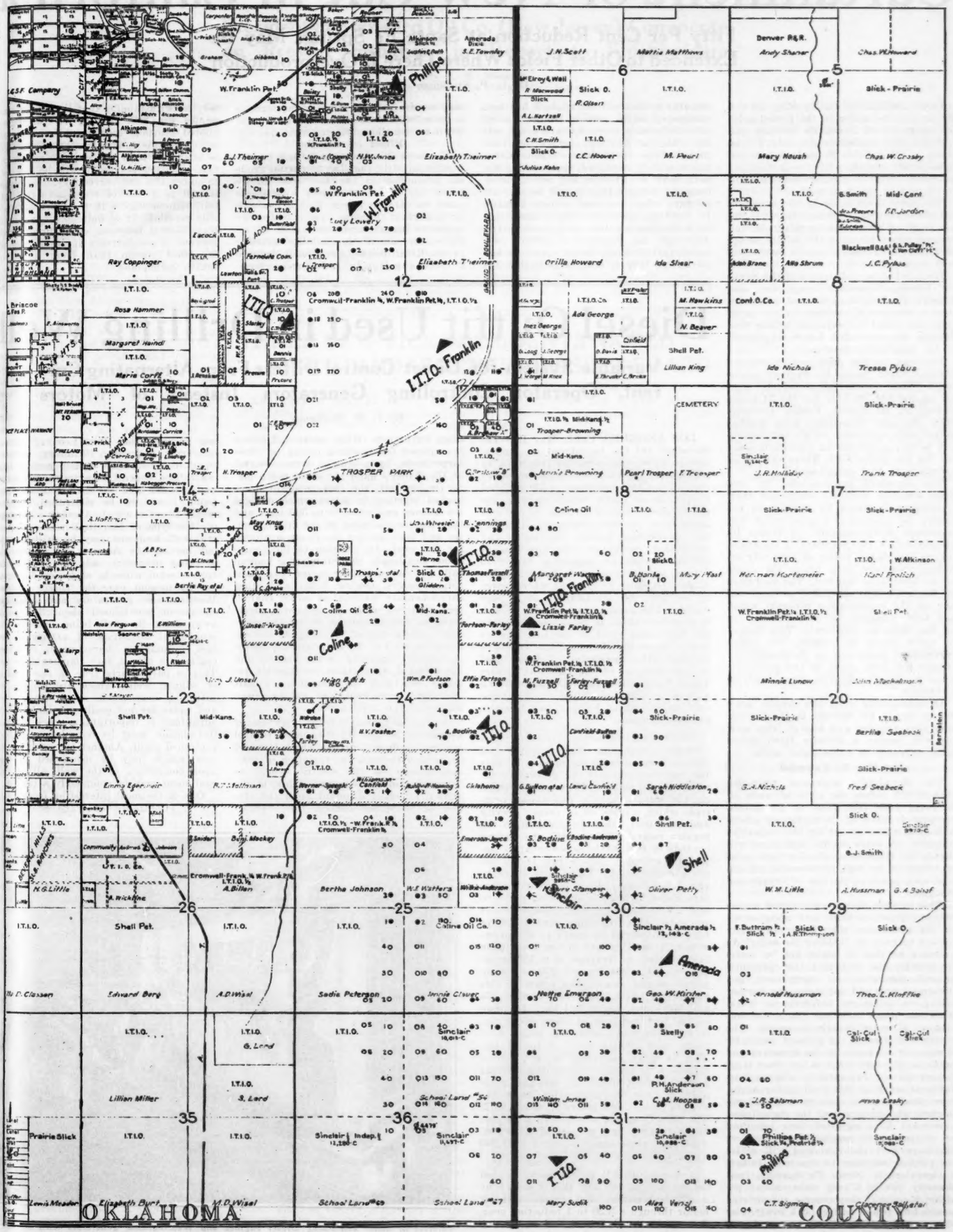
This would mean a very extensive building program. As an example of how inadequate the present plants are, compared to the estimated potential gas production from the wells being served, the operation of the Sinclair plant may be cited.

The six wells on the Sinclair 80-acre

(Continued on Page 140)

# Natural Gasoline Plants in Oklahoma City Field

**Triangle designates location of plant.**



# Curtailment or New Cut in California

## Fifty Per Cent Reduction at Santa Fe Springs May Be Extended to Other Fields Where There Is Overproduction

By L. P. Stockman

LOS ANGELES, Calif., May 19.—A 50 per cent reduction in the posted price for crude oil at Santa Fe Springs and a threat that similar drastic cuts will be made in other fields if producers do not immediately comply with the curtailment program, featured developments in California during the past week.

The price slash made by the Standard Oil Co. Saturday morning, May 17, did not come as a surprise as this reduction became inevitable upon the failure of operators to heed the ultimatum issued several days previously.

Hooper Dunbar, chairman of the Santa Fe Springs operators' committee, and Umpire Paul Grimm, warned producers that a downward revision in the price structure could be expected unless production was curtailed before expiration of the established deadline.

Previous to the price cut, Chairman Dunbar wired Santa Fe Springs operators: "Your production positively must not exceed 104,700 bbls. for the 24 hours ending at 10 o'clock Friday morning, May 16, and thereafter until further notice such operators as do not comply will be responsible for an immediate price cut for the entire field. There can be no exception to this curtailment."

The Standard supplemented its new price schedule with the statement that, "conditions in Santa Fe Springs do not justify the offering of a price which will encourage overproduction. In taking its present action the Standard is maintaining its established policy of currently offering producers such prices for crude oil as conditions warrant. The operators of Santa Fe Springs failed to agree today on the conservation program which has been accepted by the operators in all the fields in California. This failure to agree places in jeopardy the entire curtailment movement in California. No change has been made in the prices offered by the Standard in other fields in California."

Overshadowing even the drastic price cut at Santa Fe Springs is the intimation that refiners and buyers from now on will pursue a definite fixed policy with reference to curtailment work.

### Cut May Be Extended

The Standard's statement intimates that it will reduce the price of crude oil in every field that fails to get within striking distance of its maximum allowable production as set by the respective umpires. In other words, operators will decide for themselves whether they want stabilization by regulation or demoralization as a result of the law of supply and demand.

This is more than a mere threat as the major companies have just about come to the conclusion that it is practically useless to keep on "holding the sack." As evidence of this it might not be amiss to mention the fact that the operators' general committee on curtailment has disbanded and will not make any further effort to stimulate enforcement work. This can mean only one thing, the initiation of more drastic measures. The severe reduction in the price of Santa Fe Springs crude made by the Standard and subsequently concurred in by other large buyers is not expected to disrupt curtailment work in this field as far as future production is concerned. Those operators who have signed the curtailment agreement have signified their intention of continuing to regulate production in the hope that the Standard will revise its present schedule in the near future.

Operators in Santa Fe Springs, incidentally, are in a very embarrassing position because if they resume unrestricted production prices will go still lower. For the present therefore it is a case of grin and bear it. The duration of this cut remains to be seen and while it has been customary in the past to restore the old price schedules when operators got into line, this cut may stay for an indefinite period. Some are inclined to believe that prices will be advanced again within the next week or 10 days but recent developments indicate that it will be at least 30 days before any readjustment is made. If, however, operators resume unrestricted production another cut is in the cards. Although no disciplinary action was taken against Long Beach operators last week, this field is still on probation and may receive consideration in the form of a price cut unless production is brought down to the allowable maximum quickly.

### Effect on Gasoline

The most disconcerting feature in connection with the inability to curtail crude oil production is the fact that future price cuts will have a very undesirable effect on gasoline prices. This is especially important because the entire price structure must inevitably crash if refiners are unable to stabilize gasoline prices. Retail prices have already dropped 2 cents a gallon in Los Angeles territory notwithstanding that the larger companies are still holding to the figure quoted previous to the cut in crude oil prices. If this condition continues the lid is bound to blow off sooner or later. If this situation results it will be too late to undertake any corrective measures as it will be a case of every man for himself with producers in the most unfavorable position. It is quite obvious, therefore, that it behooves every producer to prevent this occurrence if possible if for no other reason than from a purely selfish standpoint.

# Diesel Outfit Used in Drilling Well

## Variable System for Direct Control Differs From Alternating Current, Operator Controlling Generators Instead of Motors

By L. P. Stockman

LOS ANGELES, Calif., May 19.—The Standard Oil Co. introduced an innovation to California operators this week by supplanting the usual steam motive power used in drilling operations with a Diesel electric drive outfit which permits the use of direct electric current in place of alternating current commonly used. If this pioneering proves successful, and everything points in this direction, it should become an important factor in future development work, especially in wildcat territory or in areas where water is not any too plentiful or of a poor quality. The present experiment, if such it may be called, is being conducted in the Inglewood Field of the Los Angeles Basin where the Standard has extensive holdings. The installation is being used in the drilling of No. 24 on Vickers Lease No. 1, although this equipment can also be used in the drilling of other adjacent wells without being moved from its present location.

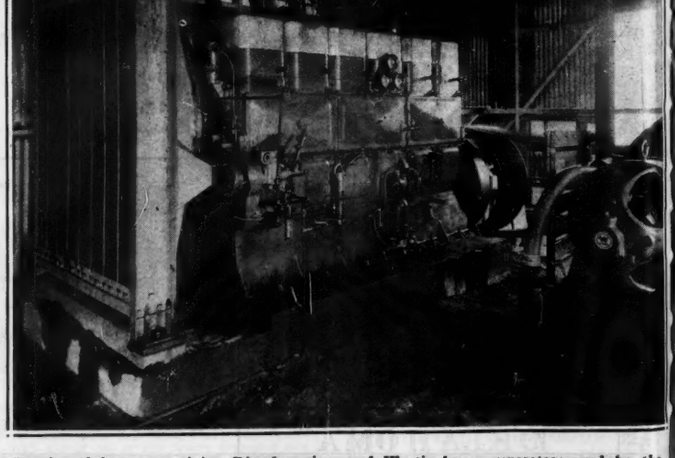
The Standard's hookup consists of a variable system for direct control and differs from alternating current in that the operator controls the generators instead of the motors. The outfit is based on the solid injection, full Diesel principle which utilizes oil of proper gravity and heat unit value. In addition to the regular rotary drilling outfit the hookup consists of two 200-horsepower Atlas Imperial 6-cylinder, 4-cycle full Diesel engines connected by Vulco rope drive to two 125 kilowatt direct current generators wired through a switching panel to one 250-horsepower, D.C. motor direct connected to a reduction gear which in turn is connected by chain to the drawworks. A 6x16" power driven mud pump is connected by Texrope to a 125-horsepower, D.C. 900 r.p.m., 250-volt compound wound motor. The speed of this motor is 1,350 r.p.m. when running idle and 900 r.p.m. under full load. Running on the fifth notch or at about 400 r.p.m. it will slow down and stall under overloads very similar to a steam engine. This is quite important from a safety angle as a regular alternating current motor would continue to run and probably in case of emergencies break the pump or pipe lines before it would stall. The Diesel engines, which burn a 24 plus Diesel fuel oil, have a speed of 450 r.p.m. while the generators are rated at 1,200 r.p.m.

A 4-speed H.R.B.-2 drawworks is used on the drilling end and this is driven by a 125-horsepower, 450 r.p.m., 250-volt motor through a 3.26 to 1 reduction gear. A magnetic brake is installed on the motor shaft which can be used while handling light loads. When additional power is required for handling casing or other large loads, by a simple button control at the driller's hand the slush pump motor is cut out, the two generators are hooked together in series which doubles the voltage and raises it to 500 volts and this doubles the speed of the drilling motor and thus doubles the power available for the work. In addition to the equipment mentioned, the Standard's hookup calls for one recording meter, two indicating meters, electric lights and other supplementary material of minor character. Fortified with an intimate understanding and knowledge of all the various requirements of the subject, the engineering staff of the Standard has shown exceptional ingenuity in the hookup and has directed its energies intelligently towards obtaining the maximum benefit and advantages contained in the possibilities of the application.

A unique feature is the very clever adaptation of the Ward-Leonard control system for direct current which is based on control through the variation of voltage, known to the electric world as "variable voltage control." This is described as being different from the system of resistance control for alternating current, the Ward-Leonard system delivering a greater flexibility, perhaps equal to steam. This system results in a centralized control of extreme flexibility and permits both the drilling motor and pump motor to be controlled from a single throttle wheel. Another advantage of this type of installation is that several well locations may be drilled without moving the engines and generators, it being necessary only to stretch the transmission wires to each new location. In the present case the Diesel engines, Westinghouse generators and auxiliary equipment are housed about 300 yards away from the well being drilled. The economical advantage of extremely low fuel consumption characteristic of Diesel engines, is also a very important factor. This is particularly true in the drilling of wildcat wells, which are usually located in inaccessible areas where fuel and water are not easily obtainable. This advantage is important as each drilling installation must be regarded as a self-contained plant. Another important economy which may be mentioned is that upon completion of the well, all of this equipment may be completely salvaged.

One of the most interesting features in

(Continued on Page 88)



*Interior of house containing Diesel engines and Westinghouse generators used by the Standard Oil Co. of California in Diesel electric hookup at Inglewood.*

# Teagle Analyzes Industry's Progress

## President of Standard Oil Co. (New Jersey) Comments on Present Situation in Report to Stockholders

By A. E. Mockler
*New York Bureau, The Oil and Gas Journal*

NEW YORK, May 19. — While the American petroleum industry has accomplished relatively little toward an actual reduction of stocks, "spasmodic attempts" to attain that goal have prevented more excessive overproduction than actually occurred, says W. C. Teagle, president of the Standard Oil Co. (New Jersey) in his annual report to stockholders of the company. In a rather thorough survey of the industry, and the affairs of the New Jersey company in particular, Mr. Teagle says:

In the light of such progress as has been made in restoring its economics to a basis of adequate earnings and conservation of resources, it is of interest to review the varying fortunes of the petroleum industry over the past three years. In 1927, for the first time, the world's petroleum resources were demonstrated to be comparable to the raw material reserves of other basic industries in that uncertainties as to early exhaustion were definitely dispelled. In 1927, also for the first time, the petroleum industry had the advantage of leadership and co-operation represented by the Federal Oil Conservation Board and the officials of several states in their efforts to effect conservation and to regulate to some extent the production of crude to conform with world requirements. After the enormous increase in crude stocks in the earlier months of that year, voluntary co-operation was resorted to and a large amount of potential production was held in the ground.

The corrective influences of this movement were so immediate and so marked that it was more generally adopted during 1928. In that year the industry reduced the amount of crude and finished products forced into storage from 69,000,000 bbls. in 1927 to 23,000,000 bbls. It more intelligently conducted its manufacturing operations during the winter months by avoiding an undue accumulation of products, and, largely as a result of the conservation measures begun in 1927, it added materially to its earnings. The beneficial results were in fact so apparent as to instill a spirit of optimism throughout the industry and this first found expression early last year in the refinery pyramiding of runs of gasoline in quantities that exceeded the existing and deferred requirements. This policy not only built up stocks of gasoline but drew upon crude production, with the result that in the early summer crude prices were advanced, the inevitable bringing in of excessive new production followed and for the time being the co-operative program was jettisoned. The cycle which began in 1927 was complete and the industry was back at the starting point. A realization of the fallacy of such a relapse led to remedial measures in the Mid-Continent Field, which measures were particularly effective in Oklahoma. The momentum of this curtailment was barely under way when crude production in California increased prodigiously and it was close to the end of the year before the correction of this situation had begun. On the whole, the position at the close of the year was reflected clearly by the volume of stocks above ground. These amounted to approximately 688,000,000 bbls. of crude, semi-refined and refined products, of which 67,000,000 bbls. were accumulated during the year.

That overproduction of crude was not the sole cause of this uneconomic condition is indicated by the fact that of the accumulation 36,000,000 bbls. were crude oil, 10,000,000 bbls. gasoline, and 14,600,000 bbls. gas and fuel oil. Throughout most of the year the wholesale price of gasoline was below the average due to the excessive refinery runs, the full momentum of which was felt in the fourth quarter. That this lower price range existed during a year in which crude prices were advanced indicated the dislocation of the industry's economies. The increase in the surplus gasoline stocks by 10,000,000 bbls. demonstrated the inelastic character of the consuming markets and forecast an ultimate readjustment of crude prices to conform with the price range of gasoline. The theory that the price of gasoline may be artificially held to maintain a fixed value for the crude has been proved to be economically unsound, since the price the consumer pays for the product depends entirely on the margin between supply and dominant demand and must inevitably influence the value of the raw material.

The earnings of the industry in 1929 were generally improved but the statement that they reflected conditions throughout the year would be hardly warranted. The events of 1928 were the determining factors in the earnings of the past year, and, while from a financial standpoint the situation was improved, the physical position was impaired by the further accumulation of stocks of crude and gasoline.

Production of crude in the United States was 1,001,702,000 bbls. as against 888,676,000 bbls. in 1928.

The increase of 113,026,000 bbls. in crude production for 1929 was accounted for by the Appalachian fields, Michigan, Kansas, Oklahoma, Texas and California, the latter State accounting for about 53 per cent of the total increase. There were declines recorded in North Louisiana, Arkansas, the Rocky Mountain area, Lima-Indiana and Illinois. Arkansas showed the largest decline, amounting to 6,719,000 bbls. Imports of crude were 78,914,000 bbls., a decrease of 853,000 bbls. from the previous year.

### New Jersey Production

Gross crude production of subsidiary and affiliated interests in 1929 was 101,100,098 bbls., an increase of 14,960,136 bbls., or 17.37 per cent, over the production for 1928. Domestic fields supplied 51,657,552 bbls. and foreign fields 49,442,546 bbls. The total production was 51.6 per cent of the crude run.

The bulk of the domestic production was obtained by Humble Oil & Refining Co. in Texas, the Carter Oil Co., principally in Oklahoma, and the Standard Oil Co. of Louisiana, principally in Louisiana. Various subsidiary and affiliated gas companies contributed to the total with crude produced in conjunction with gas operations. Although the domestic production showed an increase of 8,883,881 bbls., most of which resulted from the operations of the Humble company in the Southwest Texas fields, a much larger gain would have occurred had production activities been extended to the capacity of the fields. Production by the Carter Oil Co. was approximately 1,000,000 bbls. less than for the preceding year, a decrease primarily due to proration and conservation measures in the Oklahoma fields.

Production by foreign subsidiaries in Canada, Mexico, South America, Dutch East Indies and Europe was larger by 6,076,256 bbls. than that of the preceding year.

The increase in total production, amounting to 14,960,136 bbls., was conveniently absorbed into the company's operations as evidenced by the amount of crude on hand at the end of 1929, this showing an increase of only 4,704 bbls. At the close of the year all affiliated interests were currently producing about 285,000 bbls. daily. This was materially lower than their potential capacity owing to voluntary curtailment put into effect in some localities in the interest of conservation.

### Natural Gasoline

Production of gasoline from casinghead and natural gas was approximately 10 per cent in excess of that of the previous year, or 4,225,000 bbls., compared with 3,817,000 bbls. in 1928. A number of new plants were installed to keep pace with the opening of new crude fields or the extension of older pools. The change in motor fuel quality through a closer control of volatility with reference to stability of the product necessitated altering some of the natural gasoline recovery plants to permit of eliminating the more volatile or unstable fractions.

### Transportation

Trunk pipe lines of subsidiary and affiliated companies represented 3,737 miles at the end of the year. These lines delivered a total of 133,392,079 bbls. of crude oil, an increase of 12,500,000 bbls. over 1928. The most important exten-

(Continued on Page 87)

## THREE NEW VICE PRESIDENTS NAMED BY STANDARD (NEW JERSEY) BOARD

NEW YORK, May 17.—E. M. Clark, C. G. Black and E. J. Sadler, directors of the Standard Oil Co. (New Jersey) and outstanding figures in the petroleum industry, were elected vice president of the company at a meeting of directors here this week.

Mr. Clark has been in the oil business for the past 40 years. He entered the employ of the Standard Oil Co. (Indiana) on September 1, 1890, and was closely associated with Dr. W. M. Burton in perfecting the Burton pressure stills. He was elected a director of the Standard Oil Co. (New Jersey) December 27, 1920, and is also president of the Standard Oil Development Co. and the Standard Shipping Co.

E. M. Clark

Mr. Black has spent his entire business career in the petroleum industry. He entered the employ of the old Standard Oil Co. in Cleveland in 1883, and has held numerous posts. He was elected a director of the New Jersey company on December 27, 1920, and is president of the Standard Oil Co. of New Jersey (Delaware), a subsidiary.

Mr. Sadler, a graduate of Annapolis in the class of '99, has been in the oil business since 1906. He entered the employ of the Prairie Oil & Gas Co. in that year, and in 1909 went to Rumania as managing director of the Romano-Americana. He was elected a director of the Standard Oil Co. (New Jersey) on December 27, 1920, and is also president of the Creole Petroleum Co., a subsidiary.

C. G. Black

E. J. Sadler

# Carrying Capacities of Mud Fluids

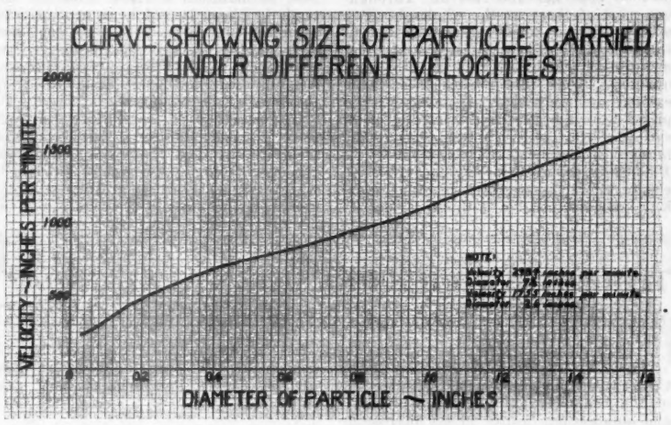
## Discussion Outlining the Possibilities of Utilizing the Energy in Flowing Mud Fluids in Rotary Drilling

By L. G. E. Bignell
*Petroleum Engineering Editor*

In rotary drilling the energy in the up-current stream of mud fluid is utilized to some extent in transporting the cuttings from the bottom of the hole to the surface, but it has long been suspected that the efficiency of this method of cleaning the hole was low, and the purpose of this discussion is to outline some of the problems involved and promote investigation looking to the possibilities of utilizing more of this energy and improving drilling conditions.

In ore dressing in metallurgical plants the classifying action of streams of water has been utilized to produce the desired classes of feeds for various machines used in separating ore from gangue. The flow of water has also been put in use in transporting the pump from one part of the mill to another.

To secure the greatest possible amount of work from these streams of water a number of investigators have made intensive studies of these conditions. Foremost among them were Rittinger, Richards, Stokes, Allen, de Caux, Cooper and Wilson, Martin, Gooskov and Finkey. The latest published data are by the University of Missouri, School of Mines, Rolla, Mo., and consists of a translation from the German of the work of Prof. Josef Finkey of School of Mines, Sopron, Hungary. The translation was made by C. O. Anderson and M. H. Griffitts.




These investigators all agree that the transporting energy to be derived from a stream of water is great, also that it is difficult to reduce the amount of work done by such streams to definite formulas because the size, shape and specific gravity of the particles acted upon vary over wide ranges, but some general laws have been definitely stated by several of them.

In classifying ore it is the usual practice to divide the settling action of the particles into two classes—free and hindered.

Richards, in his book, "Ore Dressing," defines these conditions as follows:

"Free settling is where individual particles fall freely, either in still water or against an opposing upward current, without being hindered by other particles.

"Hindered settling is where particles of mixed sizes, shapes and gravities in a crowded mass, yet free to move among themselves, are sorted in a rising current of water, the velocity of which is much less than the free falling velocity of the

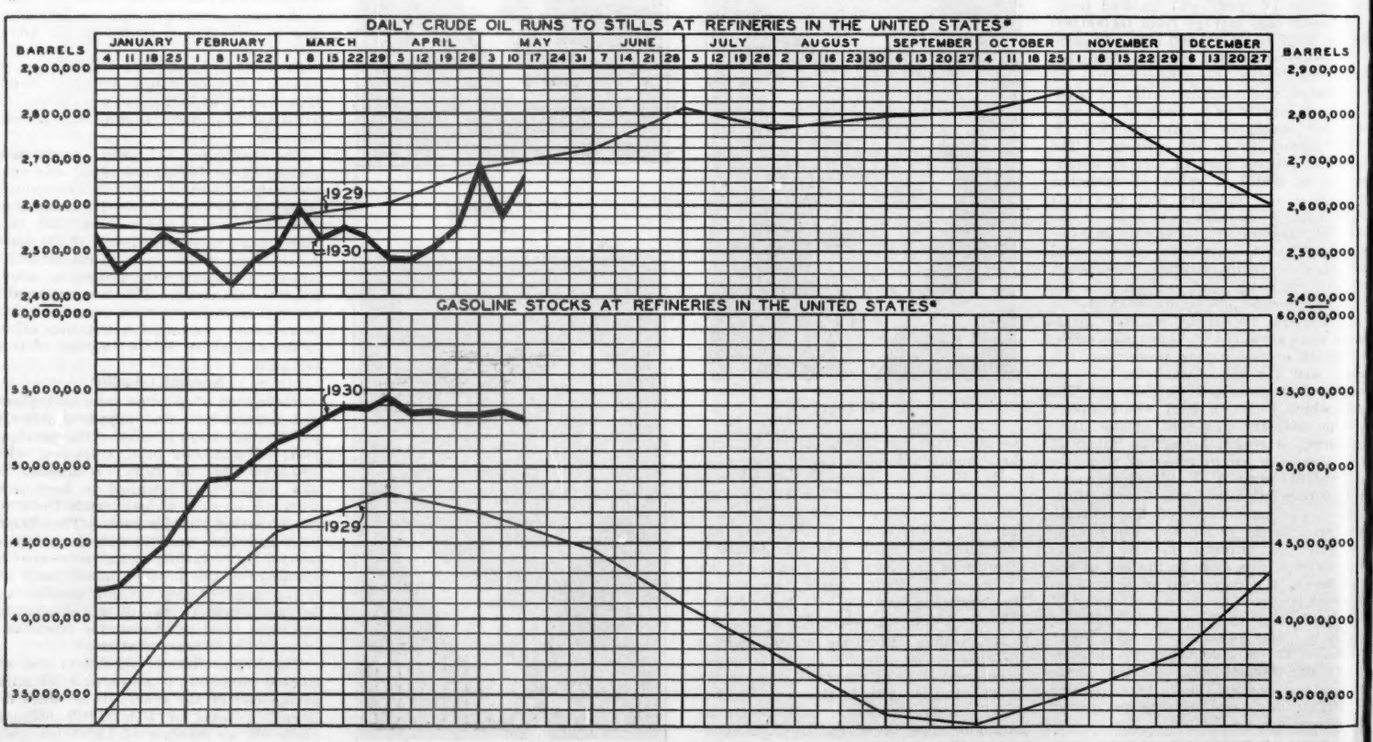
(Continued on Page 178)

## AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ended May 17:

| | Week ending May 17 | | | | Week ending May 10 | | | | Week ending January 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) | (1) | (2) | (3) | (4) |
| East Coast | 100.0 | 470,571 | 9,090,000 | 7,048,000 | 100.0 | 475,285 | 9,246,000 | 6,906,000 | 100.0 | 454,857 | 5,998,000 | 7,431,000 |
| Appalachian | 89.1 | 95,000 | 1,783,000 | 823,000 | 89.1 | 91,571 | 1,788,000 | 760,000 | 91.6 | 75,571 | 1,282,000 | 805,000 |
| Indiana, Illinois, Kentucky | 99.5 | 316,714 | 8,513,000 | 3,426,000 | 99.5 | 334,857 | 8,553,000 | 3,751,000 | 98.6 | 289,800 | 5,483,000 | 3,505,000 |
| Oklahoma, Kansas, Missouri | 89.8 | 311,432 | 4,536,000 | 4,164,000 | 89.1 | 303,857 | 4,455,000 | 4,183,000 | 87.7 | 263,428 | 3,604,000 | 3,277,000 |
| Texas | 90.8 | 635,287 | 7,940,000 | 10,482,000 | 90.8 | 630,428 | 7,942,000 | 10,132,000 | 90.7 | 539,857 | 6,590,000 | 13,757,000 |
| Louisiana and Arkansas | 96.8 | 174,000 | 2,541,000 | 1,878,000 | 96.8 | 171,285 | 2,615,000 | 1,985,000 | 96.8 | 160,000 | 2,161,000 | 4,499,000 |
| Rocky Mountain | 93.6 | 64,000 | 2,800,000 | 1,102,000 | 93.6 | 59,285 | 2,743,000 | 1,083,000 | 93.3 | 41,614 | 2,273,000 | 973,000 |
| California | 99.3 | 578,714 | 16,117,000 | 108,081,000 | 99.3 | 593,714 | 15,861,000 | 108,149,000 | 99.3 | 642,857 | 14,826,000 | 105,770,000 |
| Total United States | 95.7 | 2,645,718 | 53,320,000 | 137,004,000 | 95.6 | 2,660,300 | 53,203,000 | 136,949,000 | 95.4 | 2,468,285 | 42,217,000 | 144,017,000 |
| Texas Gulf Coast | 100.0 | 474,000 | 6,814,000 | 7,678,000 | 100.0 | 478,571 | 6,725,000 | 7,413,000 | 100.0 | 429,585 | 5,579,000 | 10,792,000 |
| Louisiana Gulf Coast | 100.0 | 119,143 | 2,149,000 | 1,014,000 | 100.0 | 117,428 | 2,221,000 | 1,111,000 | 100.0 | 108,514 | 1,877,000 | 3,818,000 |

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.




*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.*

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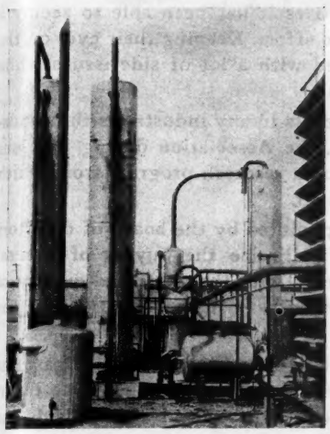

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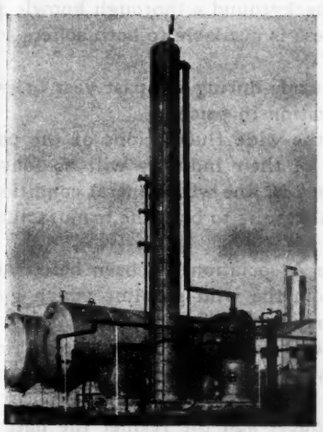

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## THE NEWEST BRANCH OF THE INDUSTRY

This week the newest branch of the petroleum industry is holding its annual meeting in Tulsa—the Natural Gasoline Association of America.

Sitting in the sessions of this organization makes one realize the tremendous progress along technical, manufacturing and marketing lines that is constantly under way in the oil business.

The Natural Gasoline Association, which is only nine years old, compares favorably in its accomplishments with many industries which have been holding annual meetings for 25 years or more. A crude oil producer of say 15 years ago sitting in one of these meetings can hardly realize that this relatively new branch of the industry has been developed out of what he considered a nuisance. The producer's main concern at that time was getting rid of the product for which there was practically no market and which he felt interfered seriously with his main operation, the production of crude oil.

The Association, although less than a decade old, represents an important change. From what was practically a waste product it last year produced 1,559,600,000 gallons of natural gasoline with a value at the plants of at least $100,000,000.

The Oil and Gas Journal's Annual Survey of the Natural Gasoline industry, published in this issue, shows that there are now over 1,000 plants scattered throughout the fields of the United States with a potential capacity of almost 10,000,000 gallons of natural gasoline a day, and representing an investment which is rapidly nearing the half billion dollar mark.

Last year the natural gasoline production was approximately two and one-fifth gallons of natural gasoline for every barrel of crude oil produced and at the present time it is almost two and one-half gallons to the barrel of crude oil.

Thus the natural gasoline manufacturer is making a 44½-gallon barrel out of what was formerly a 42-gallon barrel.

The petroleum industry has no more concrete example, outside of cracking, of the gains it has made in the conservation of oil.

Compare this situation in which the natural gasoline manufacturer is making approximately 11 per cent of the total motor fuel produced in this country, for domestic and export consumption, with the situation previous to 1913 in which the so-called casinghead gasoline of that period was useless and wasted and you have a definite picture of what well directed application has been able to accomplish in one branch of the oil industry.

The Natural Gasoline Association and its membership deserves a great part of the credit for what has been accomplished in recent years. Confining its efforts to problems of practical value to the natural gasoline manufacturer and to his customers and keeping away from those activities which have seriously hampered the work of other associations in all industries it has been able to secure a maximum return from co-operative effort. Keeping their eyes on the ball, they have not been befuddled with a lot of side issues while they were trying to reach the goal.

Realizing that the basis for success in any industry is the fundamental knowledge of its product, the Association during the four years just completed has carried on a research program from which the entire oil industry has benefited.

The Educational Committee appointed by the board of directors of the Association in 1926 to familiarize the buyers of natural gasoline and the public as consumers with the value and quality of the product succeeded even beyond the initial expectations of the most sanguine.

It is not too much to say that it educated the natural gasoline industry as well as the buyers and users of its product. The information obtained by this research was so well established and convincing that it needed but to be brought out to be accepted.

The membership of the association believed that volatility is the most important factor in the performance of motor fuel and their research investigation has definitely established that fact and at the same time dispelled some misconceptions regarding the use of their product.

They have benefited materially from this program in the greater information obtained and no one has suffered. The entire oil industry, in fact, has benefited from this additional knowledge coming at a time when more and more attention is being given to the properties of motor fuel in relation to its performance.

With the tendency towards high speed motors, changes in the compression ratio, and improvements in airplane motors, governmental agencies desired new specifications and the manufacturers were obliged to take up the subject anew. The research program of the Natural Gasoline Association had placed the natural gasoline industry in an advantageous position in the resulting discussion of changes in the specifications and the outcome has been a better understanding with the refiners, to the betterment of both branches of the oil industry.

With this scientific data as a background a thorough knowledge of the economic side of the business is available to both sellers and buyers.

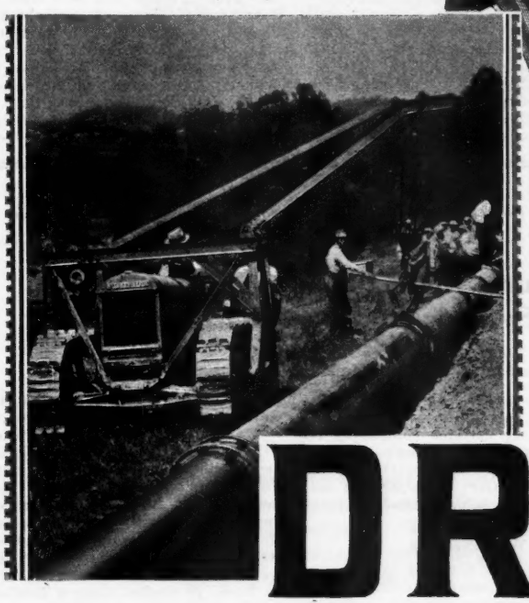
Substantial progress has been made during the past year or two in bringing about greater stabilization in prices.

Manufacturers now feel that the wide fluctuations of the past which hindered the development of their industry will no longer prevail and prices can be maintained in line with general conditions within the industry with benefical results to both the manufacturer and his customers.

One phase of the work of the Association has been better and better products, getting away from the wild gasoline which gave the industry a bad name in its early years.

Specifications of their product have been changed from time to time in line with improved manufacturing practices and changing requirements in consumption.

Standing between the oil producer and the refiner the natural gasoline manufacturer's position is affected by the activities of both. The supply of his raw material may be enormously increased by the operations of the producer of crude and the return on his product may be determined by the operations of the refiner. But in the past nine years the natural gasoline industry has passed through every conceivable experience and survived. Its position is stronger today than ever, largely because of the indefatigable efforts of the members of the Association who have stuck closely to the problems of their own business and succeeded in solving them.



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# Production Cost in the Mid-Continent

## Co-operation Can Still Be Improved Between Natural Gasoline Manufacturers as Well as Between Producer and Manufacturer

By A. J. Schlosser and J. E. Dale
Barnsdall Oil Co.

Co-operation, while it is continually improving between the gasoline manufacturer and producer, can still be much improved, not only between producer and gasoline manufacturer, but also between manufacturers. For example, in flush fields the manufacturer is expected to receive the gas from a separator at each well. As depletion takes place, it has been customary to pipe four wells to one trap. The gasoline manufacturer must then remove his pipe from the four traps and connect to the one central trap. As depletion further proceeds, and the use of a trap is unnecessary, the wells are put to pumping and the manufacturer must then repipe to each well. This is a continually changing service that is very expensive to the gasoline manufacturer, and adds materially to his costs. By using a larger trap, this duplication of field piping could be eliminated.

Automatic float controls and regulator equipment, ordinarily used on traps for handling oil and gas individually, to make proper delivery of both to the required destination, if properly cared for will fulfill the requirements. However, all automatic apparatus have reasons for failing at times. Swab rubbers, and other foreign matter interferes with the proper function of float valves, especially as to the oil delivery requirements from the trap, and I have yet to see the first casinghead gas-gathering pipe system that is not occasionally flooded with oil, in flush fields. This is a loss to the gasoline manufacturer, and sometimes even causes surface damage in draining the oil from the gas lines. By the use of strainers, which can be cleaned without interference to service, much of this lost oil can be saved. Also, co-operation and daily attention to this sort of equipment in nearly all cases can be much improved, and the cost of manufacturing gasoline reduced.

There are many things entering into the cost of manufacturing casinghead gasoline when considered from the standpoint of each individual plant; the method of production, whether it be absorption, compression or charcoal; a plant on flush production, reasonably well settled production, or badly depleted conditions; the volume of gas per well; the content of the gas per lease or farm on which the gas is metered; the number of meter installations for each individual plant; the number of wells connected to each plant, necessitating more or less field piping, as the case might be; the intake pressure at which the plant is operated, whether it be operated on well pressure or vacuum.

Some of the plants considered are operated on extremely high vacuum necessitating practically as much horsepower as when the production was flush and gas plentiful, which also necessitates practically as much operating expense, including machinery, upkeep, and the employment of labor, as was necessary during the period of flush production. As a consequence, the cost per gallon is increased where conditions have reached the depleted state. The cost per gallon for each individual plant, and the average cost for the entire Mid-Continent Field, would be a long drawn out process if arrived at definitely.

In preparing this article, I have chosen a group of plants situated in Kansas, Oklahoma and Texas as a basis for calculation. These plants are fairly representative in proportion to size, construction, age and operation, ranging from 1 to 15 years old, operating on production ranging from flush to badly depleted conditions, volumes varying according to term of years in operation.

In this group of plants there are 2 in Kansas, 46 in Oklahoma and 8 in Texas. Their intake pressures range from well pressure alone to 27-inch vacuum. Their volumes range from the very small to a relatively large capacity plant. The area covered by each individual plant ranges from 1 well to 422 per plant, and connected to these plants is a total number of 5,096 wells, or an average of 91 wells per plant. In this group of 5,096 wells, there are about 60 flowing natural, about an equal number on gas lift, also some 50 wells swabbing, the balance being pumpers.

These figures represent the cost of production for the year of 1929. Production cost includes everything that goes into the expense of manufacturing gasoline, including depreciation. Also, the revenue derived from the sale of residue gas has been computed and credited back to the cost per gallon, leaving the net figures the actual cost of 56 plants in question for the past year.

The average gas volume of each plant was 200,225,000 feet per month. The average content 1.6 gallons per 1,000 feet. The average plant yield was 320,970 gallons per month, or 10,673 gallons per day, and the average cost per gallon was .0574 cents.

In the Mid-Continent area, comprising Kansas, Oklahoma, Texas, New Mexico, Louisiana and Arkansas, and the Rocky Mountain region, which is usually classed in the Mid-Continent Field, we have 2,663,684 acres producing casinghead gas. On the West Coast there is 93,694 acres. In the Mid-Continent Field for the month of March, 1930, there was produced 111,000,000 gallons of gasoline. On the West Coast there was produced 70,000,000 gallons of gasoline. The Mid-Continent area, therefore, is producing 1½ times as much gasoline as the West Coast, and covering practically three times the amount of area in order to obtain its production.

The total average production per month for the 56 plants used to establish these figures was 17,931,057 gallons, with a yearly total of 215,172,684 gallons. This was manufactured at a cost of $12,350,091, and represents about 10¾ per cent of all the casinghead gasoline manufactured in the United States.

Figures asked for, but reaching me too late for incorporating in this article, on account of not being complete on the entire subject, which was sent from a very large manufacturer of casinghead gasoline, tends to further substantiate production cost as presented here, with a tendency to indicate that unless careful management is employed throughout the entire Mid-Continent area, that manufacturing cost will run dangerously close to 6 cents per gallon for the year of 1930.

# Production Methods in California

## Great Diversity in Pressures. Many Plants Have Two and Even Three Gathering Systems. Fair Price Base Needed

By O. Weaver
Barnsdall Oil Co. of California

California has at present 138 natural gasoline plants in operation which are treating over 52,000,000,000 feet of gas per month, with a gasoline yield of 71,000,000 gallons. This is an average of 2,366,000 gallons per day, or slightly over 3.7 gallons per barrel of crude oil produced daily, which is approximately 630,000 bbls. Certainly this has grown to the stature of a major industry, and the intent of this paper is to give a short resume of the general conditions being met with at the present time.

### Methods of Oil Production

The State now has 36 producing fields, with another discovery, Venice, in the process of development, and a total of 12,695 wells, of which 3,060 are shut in; giving the 9,635 producing wells an average daily production of 65 bbls. Of the shut-in wells, 2,672 are old pumpers in the San Joaquin Valley, and were they on production, the average production per well would be materially decreased. The oil gravities range all the way from 8° A.P.I. in the Santa Maria district, to 61° at Kettleman Hills, with the principal producing methods being natural flow, gas lift and pumping. The average gas volume per well for the State is 171,000 feet per day, giving a gas oil ratio of 2,000 feet per barrel of oil. Ratios of 1,000 to 1 for flowing wells, and 500 to 1 for gas lift are generally accepted as ideal, but three fields in the State, Santa Fe Springs, Ventura and Kettleman Hills, are producing such excessive volumes of gas that the ratio for the State is raised to the above figures. These three fields are producing three-fifths of the gas and just one-half of the natural gasoline in California at present. Kettleman, with over 300,000 gallons of gasoline, while the most attractive proposition for a plant operator, nevertheless constitutes a big menace to the price structure and profits of the smaller plants.

An approximate figure on well production methods now in use is: Flowing, 30 per cent; gas lift, 10 per cent, and pumping, 60 per cent. Production obtained by the swab is too negligible to be considered. The gas lift method so far has been used very little in any fields except in the Los Angeles basin, but there it has been a life-saver for many plants, and the gasoline content of recirculated gas is surprisingly high, in many instances coming very close to the field average. Over 4,500,000,000 feet per month now being treated is recirculated gas.

### Well Pressures

There is a great diversity in pressures carried on wells where gas is going to plants, since common practice is to carry the gas through the plant on tubing pressure as long as possible, and avoid installation of compressors. This can usually be done for one to two years, except where drilling is too congested, but has the bad feature of giving a smaller yield, since the gasoline content of the gas very quickly reflects changes in separator trap pressures. This pressure ordinarily is about 40 pounds, governed somewhat, of course, by load on the plant, and gathering line sizes. Producers of the State are very loath to having vacuum pulled on the well, or casinghead, itself, and when wells are placed on the pump they are still operated through separators, and enough pressure is held thereon to put the oil into the tanks, or else the trap is elevated to permit the oil to gravity over. This has caused many plants to have two, and sometimes even three, distinct gatherings systems.

This is particularly true of the Santa Fe Springs and Long Beach Fields, where there are several oil zones, and deeper drilling booms have followed depletion of the upper measures. Both are closely drilled fields, with a consequent rapid decline. At Long Beach, the vacuum systems run to about 12 inches, with an intermediate of 20 pounds and a high of 50 pounds. Santa Fe Springs has vacuum of 7 inches, an intermediate of 40 pounds and highs of 250 and even 500 pounds. This, of course, is accomplished by double trapping, and installing high-pressure absorbers, giving greatly enlarged plant capacity with no loss of production, and without the necessity of additional compressor installations. Kettleman Hills plants are operating at 400 to 450 pounds, and by double trapping are averaging about 1 gallon per 1,000 feet.

### Gas Traps and Their Operation

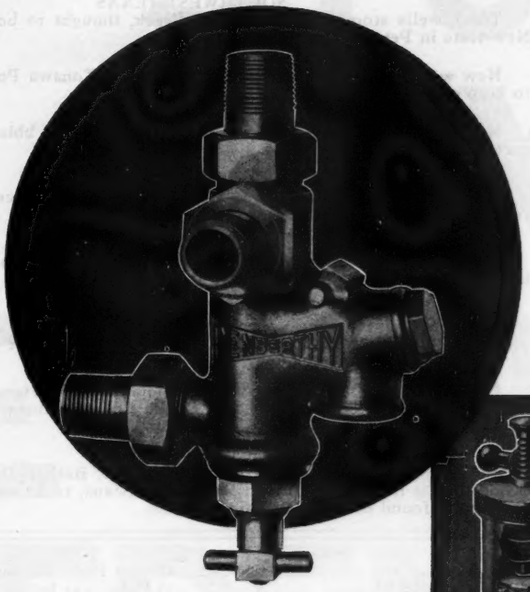
The average gas trap installation for new wells is of 5,000,000 to 6,000,000 feet capacity and 175-pound pressure test. If the gathering line pressure is pulled down to 10 pounds or below, separation is usually very good, but so long as 40 to 50 pounds is held on them, a vapor gathering system to the flow tanks is found profitable, since a flowing well will yield 12,000 or 15,000 feet of 7 to 10-gallon gas per day. On the high-pressure traps in use in some fields, pressure regulators are provided. After the traps are properly regulated, very little trouble is experienced except in case of tight emulsion.

### Comparative Volumes of Gas

Practically all gas processed in California is tubing gas, since casinghead vacuum is frowned upon, except in a few isolated cases, and is then very low, being pulled by single-stage compressors only. Also, only two or three plants are treating dry gas, and in those instances the dry gas is residue from overloaded plants in flush fields, and will probably not be found profitable when the volume has declined. To operate a plant at a profit here, if single-stage compressors are necessary and assuming a yield of 1 gallon per 1,000 feet, one should have at least 5,000,000 feet per day.

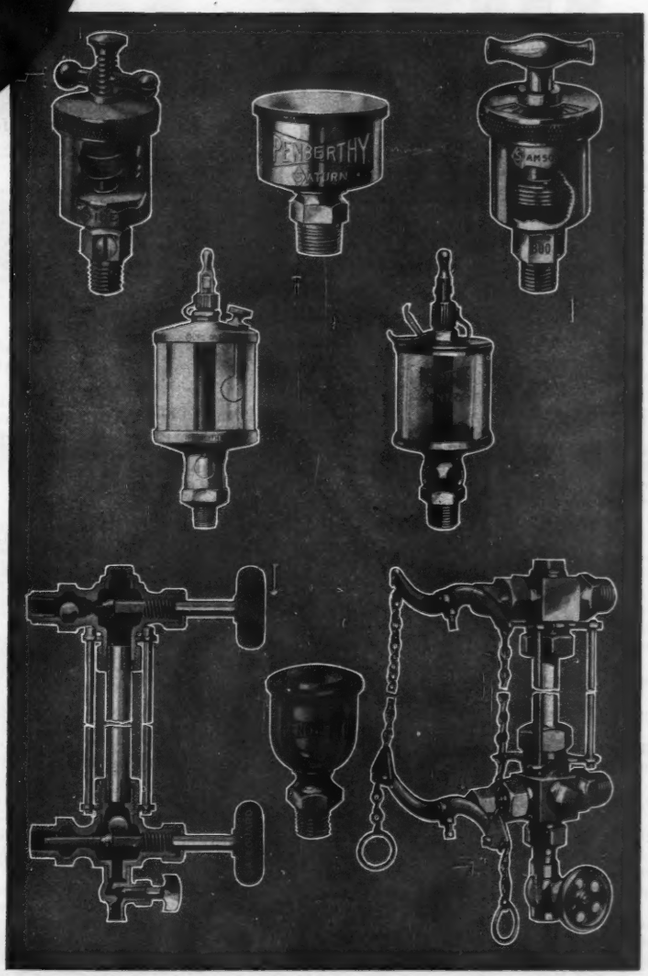
Of course, many small plants are running at a much lower production figure but usually are paid out and concerned now only with operating expense, or else have been put in for future development. The average gasoline content for the State is approximately 1.4 gallons per 1,000 feet, with the best of it by fields being slightly over 2 gallons, and the leanest about 0.9 gallon. Many individual wells will go much higher, even to 5 gallons, but the big gassers pull the average down. Not more than 5,000,000 feet a day is now blowing wet, and of the 1,700,000,000 feet being processed, about 50 per cent is handled through compressors, the other half going through on well pressures. This fact in itself would seem to indicate that the State as

(Continued on Page 140)



# ECONOMY SUGGESTS

PENBERTHY PRODUCTS

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## SMACKOVER WELLS SHUT DOWN BY FLOOD WATERS

SHREVEPORT, La., May 20.—Seven hundred and fifty-seven wells in the heart of the Smackover Field in Union and Ouachita Counties, Arkansas, are off production on account of high water and it is expected the number will mount to 1,000 or more when it becomes possible to get through the field in boats for a more accurate check. The Magnolia Petroleum Co. with approximately 100 wells, Standard Oil Co. with more than 80 and Gulf Refining Co. with a like number were hardest hit, the remainder being divided between scores of other operators and producers.

Incessant rains during most of last week and backwater from the flooded Ouachita River and Smackover Creek have flooded a large part of the field. Gathering lines have been washed out in a few cases and pumping stations are shut down, but so far no breaks in main lines from the field have been reported.

### THE OIL MAN'S CALENDAR

May 23-24—Tulsa, spring meeting. Mid-Continent section, A.P.I. Division of Production, Mayo Hotel.

May 23-24—Tulsa, Mid-Continent Oil Scouts and Land Men's Association.

May 25-29—French Lick Springs, Ind., summer meeting, Society of Automotive Engineers.

May 26—French Lick Springs, Ind., A.P.I. Eastern Group on Automotive Transportation.

May 30—Indianapolis, Ind., annual 500-mile automobile race, Speedway.

June 2—Washington, D. C., Conference on Greasing Equipment, A.P.I., and Conference Committee on Weights and Tolerances.

June 3-6—Washington, D. C., Twenty-third National Conference on Weights and Measures, United States Bureau of Standards.

June 4—Norman, Okla., Opening of Petroleum Engineering Field Course, University of Oklahoma.

June 4-6—Detroit, Mich., American Institute of Chemical Engineers, Book-Cadillac Hotel.

June 5—New York, annual meeting, National Automobile Chamber of Commerce.

June 12-13—Charleston, W. Va., annual convention, West Virginia Oil Marketers Association, Daniel Boone Hotel.

June 13-14—State College, Pa., Oil, Power and Gas Divisions. American Society of Mechanical Engineers.

June 16-25—Berlin, Germany, World Power Conference.

June 23-26—San Francisco, Calif., convention, American Railway Association.

June 23-27—Atlantic City, N. J., annual meeting, American Society for Testing Materials.

August 4-9—New York, International Exposition of American Import Trade, Grand Central Palace.

September 2-4—Toronto, Ontario, North American Gas Tax Conference, King Edward Hotel

September 8-12 — Cincinnati, Ohio, Eightieth meeting, American Chemical Society, Hotel Gibson.

September 17-19—Atlantic City, N. J., National Petroleum Association, Hotel Traymore.

September 29-October 4—Pittsburgh, Pa., petroleum section, National Safety Council.

October 6-11—Washington, D. C., Sixth International Road Congress.

October 14-16—Kansas City, Mo., convention, Big Four State Jobbers.

November 10-13—Chicago, Eleventh annual meeting, American Petroleum Institute, Stevens Hotel.

## DEEP CUT IN PRICES IN SANTA FE SPRINGS

LOS ANGELES, Calif., May 17.—The Standard Oil Co. of California announced a reduction of from 75 to 90 cents per barrel in the prices at which it offers to purchase the light crude oils produced in Santa Fe Springs Field. The company issued the following statement:

"In taking this action, the company is maintaining its established policy of currently offering producers such prices for crude oil as conditions warrant. The present conditions in the Santa Fe Springs Field do not justify the offering of a price which will encourage overproduction.

"The operators of Santa Fe Springs today failed to agree on the conservation program which has been accepted by operators in all other fields in California. This failure to agree on the statewide program places in jeopardy the entire conservation movement in the State.

"No change has been made in the prices offered by the company for oil in any other fields in the State."

The old and new price schedule in Santa Fe Springs follows:

| | Old price | New price |
|---|---|---|
| 21-21.9 | $0.92 | $0.50 |
| 22-22.9 | .95 | .50 |
| 23-23.9 | 1.01 | .50 |
| 24-24.9 | 1.07 | .50 |
| 25-25.9 | 1.13 | .50 |
| 26-26.9 | 1.19 | .50 |
| 27-27.9 | 1.25 | .50 |
| 28-28.9 | 1.31 | .56 |
| 29-29.9 | 1.37 | .62 |
| 30-30.9 | 1.43 | .68 |
| 31-31.9 | 1.49 | .74 |
| 32-32.9 | 1.55 | .80 |
| 33-33.9 | 1.60 | .85 |
| 34-34.9 | 1.65 | .90 |
| 35-35.9 | 1.70 | .95 |
| 36-36.9 | 1.75 | .95 |
| 37-37.9 | 1.80 | .95 |
| 38-38.9 | 1.85 | .95 |
| 39-39.9 | 1.90 | .95 |

## Late Fields

### CANADA

CHATHAM, Ontario, May 19.—In South Turner Valley, Freehold Oil Corp.'s No. 2, LSD 8, Section 20-19-2w5, blew into production in the deep lime at 4,390 feet with wet gas flow estimated 20,000,000 feet a day and crude naphtha recovery 250 to 500 bbls.

### WEST TEXAS

FORT WORTH, Tex., May 20.—Deep Rock Oil Co. and others' No. 1 King, Section 11, Block A-46, Andrews County, south offset to the discovery well, is drilling ahead at 4,335 feet with the oil increasing in the hole. Texas Pacific Coal & Oil Co.'s No. 1 McKenzie, Section 28, Block 45, Ector County, northwest of the Penn Pool, is shut down at 3,775 feet, but may be carried deeper. It swabbed 52 bbls. the last 17 hours after a 220-quart shot from 3,720-75 feet. Top of the pay is 3,725 feet with an increase in oil at 3,755 feet. Deep Rock company's No. 1 King, Section 11, Block A-46, Andrews County, filled up 2,500 feet in six hours; top of pay 4,335 feet; drilling ahead at 4,370 feet.

### GULF COAST

HOUSTON, Tex., May 20.—Rio Bravo Oil Co.'s No. 1 fee, Bender South Addition, on the west side of the Humble Field, was flowing at the rate of about 750 bbls. of oil on Tuesday. As the well so far has not entirely cleaned itself, no definite check on the production and gravity of the oil is available. The well is the second producer on the west side of the Humble Field and being 1,300 feet to the southeast of the discovery well, Sun Oil Co.'s Bender well, it belongs in the wildcat class. Production is from a sand at 3,794 feet, to which depth it was sidetracked after the original hole at a total depth of 4,293 feet tested salt water.

Humble Oil & Refining Co.'s No. 13 Brazos at DeWalt, Fort Bend County, has been completed, flowing 415 bbls. of oil in the first 24 hours from a sandy shale at a total depth of 3,712 feet.

At Big Creek, Gulf Production Co.'s No. 24 Davis, an old well deepened to 3,625 feet, is flowing at the rate of 1,100 bbls. daily. It is a new completion.

Operations at Barbers Hill today were continuing about as usual, following a windstorm which struck that field Sunday. A check of the field Monday showed 17 derricks down. The part of the field affected mostly is on the south and southeast side and the derricks were over old producers.

### OKLAHOMA

The Coline Oil Co. completed two wells, both estimated to be 5,000-bbl. producers, on its Clauer lease in the Oklahoma City Pool, Monday, May 19. Coline Oil Co.'s No. 1 Clauer, NE cor. SE, Section 25-11-3w, blew in about noon and was shut in as soon as it had cleaned itself. It is estimated to be a 5,000-bbl. well, producing from Simpson sand, total depth 6,389 feet. No. 5 Clauer, NE cor. SE SE, Section 25-11-3w, blew in later in the afternoon and gauged 2,182 bbls. of oil in 12 hours, and 10,000,000 feet of gas. The oil was found in Simpson sand at 6,270-6,588 feet.

An important test in the north end of the Oklahoma City Pool was showing oil. The Wirt Franklin Petroleum Corp.'s No. 1 Wright, NE cor. NW, Section 2-11-3w, cored a sand at 6,277-95 feet with a showing of oil. The test is located a mile northwest from the nearest production on the east edge of the Oklahoma City limits.

Indian Territory Illuminating Oil Co.'s No. 2 L. Trosper, SW cor. NW, Section 12-11-3w, was bailing in from a total depth of 6,475 feet in Simpson lime.

Cromwell-Franklin Oil Co.'s No. 16 Trosper Park, SE cor. NW NE, Section 13-11-3w, was bailing down from a total depth of 6,400 feet in Simpson sand. Same company's No. 19 Trosper Park, SW cor., Section 13-11-3w, was also bailed down. No gauges were available. The total depth of the well was 6,397 feet.

Cromwell-Franklin Oil Co.'s No. 2 Thompson, SW cor. NE, Section 15-12-3w, north of the state capitol, was being abandoned as a failure after reaching a total depth of 4,575 feet. The test was expecting to find production in the 4,300-foot horizon.

Indian Territory Illuminating Oil Co.'s No. 1 Thomas Fuzzell, SW cor. SE SE Section 13-11-3w, the largest well ever completed in the State of Oklahoma and the largest in the Oklahoma City Pool, made 44,557 bbls. on its initial gauge. It later went dead and was put on the air lift. The first gauge by the air lift was 377 bbls. of oil and 377 bbls. of water in 1 hour and 40 minutes.

The oil production from the Oklahoma City Pool slumped on the gauge of May 20 when 47 producing wells made a total of 95,959 bbls. from the 237 wells completed.

The Konawa Pool made 21,710 bbls. from 53 wells on the gauge of May 20.

Barnsdall Oil Co.'s No. 1 Johnson, NE cor. SE Section 17-6-6, Konawa Pool, Seminole County, was completed and

(Continued on Page 184)

# High Spots in Field News

### NORTH LOUISIANA-ARKANSAS

**Deep gasser in Panola County, Texas, reported 20,000,000 feet with rich gasoline content.**

### SOUTHWEST TEXAS

**Three wells stop flowing at Darst Creek, thought to be in crevice area. New tests in Pettus.**

### OKLAHOMA

**New wells in Oklahoma City, Earlsboro and Konawa Pools make it hard to keep production down.**

### KANSAS

**New peak in production, average for week 131,000 bbls., with big pools curtailed. Proration continued.**

### ROCKY MOUNTAIN AREA

**Big drilling campaign begun at Hobbs, New Mexico. Increase in minimum rentals. Eddy County failures.**

### CALIFORNIA

**New cut in other fields may follow cut at Santa Fe Springs unless curtailment is observed. Maximum set at 593,000 bbls.**

### WEST TEXAS

**Andrews County now center of interest with three tests approaching completion. Penn Pool limited to north notwithstanding small pumper.**

### NORTH TEXAS AND PANHANDLE

**Hartley County's wildcat gasser has hole full of water; will be plugged back to be completed as a gas well. Cooke County wildcats not showing as well as expected. Extension in Clay County.**

### GULF COAST

**Possibility of deep sand production at both Barbers Hill and Refugio. Rank wildcat in South Cameron Parish, Louisiana, to be tested in few days. Deep sand found in Bay St. Elaine wildcat.**

### MAGNETIC STORM BULLETIN

United States Coast and Geodetic Survey station at Tucson, Ariz., reports a severe magnetic storm starting at 8 a.m. on May 16 and ending at 8 a.m. May 20, central standard time. The telegrams read:

"Storm begins sixteenth fourteen severe.

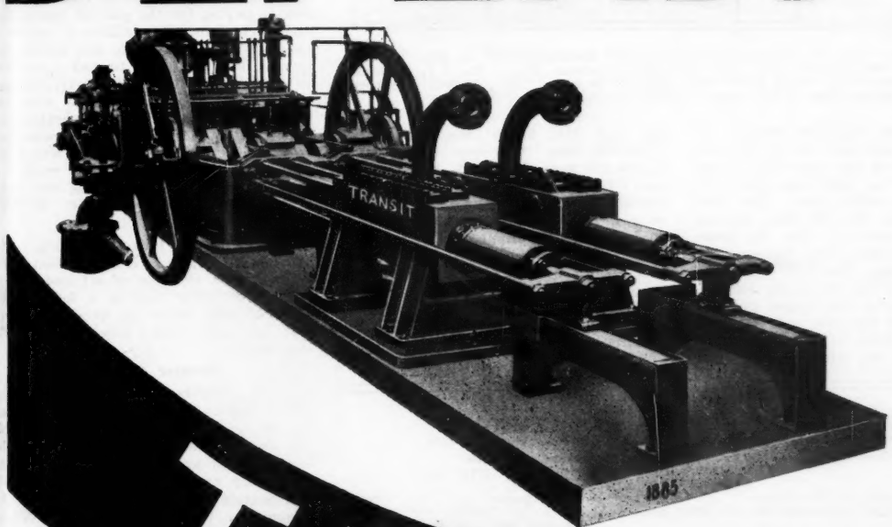
"Storm ended twentieth fourteen."

## SCORE CARD ON OIL PRODUCTION

Below is shown allotted average daily production, April to December inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending May 17:

| | Allotted (bbls.) | Actual (bbls.) | Over (bbls.) | Under (bbls.) |
|---|---|---|---|---|
| California | 610,000 | 630,250 | 20,250 | ..... |
| Oklahoma | 655,000 | 658,980 | 3,980 | ..... |
| Texas | 750,000 | 853,885 | 103,885 | ..... |
| Other fields | 480,000 | 468,768 | ..... | 11,232 |
| Total | 2,495,000 | 2,611,883 | 128,115 | 11,232 |

# STURDY FLEXIBLE ECONOMIC DEPENDABLE

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# Oklahoma Production Is Climbing

## New Wells in Oklahoma City and Earlsboro Areas and Konawa Pool Make It Hard to Keep Production Down

By W. A. Spinney
*Staff Correspondent, Oklahoma Fields*

Oklahoma's production during the seven days ending May 17 was increased, the total daily average being approximately 659,000 bbls. which is a 7,000-bbl. a day increase. The new potentials in the six areas comprised of St. Louis, Maud, Mission, Carr City, Pearson and old Earlsboro Pools, in the Greater Seminole area were smaller. They were taken during the first 15 days in May.

The Oklahoma City Pool has another wild producer a half mile east of the Indian Territory Illuminating Oil Co.'s No. 1 Mary Sudik, which flowed wild some time ago. The new well blowing wild is the Phillips Petroleum Co., Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Sigmond, NW cor. SW, Section 32-11-2w. It has been out of control since Friday, May 16. A great part of the development work in the south end of the pool has been shut down on account of it. The well extends production one location southeast and is located on a block of 2,840 acres in which the Phillips Petroleum Co. owns a 50 per cent interest and the Prairie Oil & Gas Co. and Tom Slick Oil Co. each own a quarter interest. The well on Monday was estimated to be making 15,000 bbls. of oil a day and 100,000,000 feet of gas from a total depth of 6,610 feet.

The South Earlsboro Pool is becoming important. It has completed the largest well in the Seminole area and the second largest well in the Greater Seminole area. Production in the pool increased from 5,000 bbls. a day to 26,000 bbls. in the last few weeks, with the producing wells being curtailed. Potential production is nearing the 50,000-bbl. mark.

In the new Wanette-Asher district, in Pottawatomie County, new tests were nearing the pay sand. The discovery well is slowly increasing its production. The initial production of this well was 740 bbls. on April 22. The gauge of May 17 was 928 bbls.

The total recovery from the Oklahoma City Pool since the discovery well was drilled in December, 1928, up to May 5, 1930, was 19,750,900 bbls. of oil. Of this amount the pipe line companies have run approximately 19,100,900 bbls. of this oil. The difference is being held in lease storage.

### New Wells in Oklahoma City Pool

Early in the week new wells were being completed in the South Oklahoma City Pool. The Indian Territory Illuminating Oil Co. completed six new producers in two days in that area. No. 5 Emerson, NE cor. SE SW, Section 30-11-2w, in the south end of the field, blew in with a light gas pressure and with an average hourly flow of 135 bbls. The well is producing from the Simpson sand at a total depth of 6,491 feet. It made 2,830 bbls. the first 21 hours. The next well completed was No. 2 H. W. Jones, NE cor. SE SW, Section 1-11-3w, in the northern end of the pool. It failed to make as large a well as No. 1 H. W. Jones, on the same lease, which was completed a few days ago. The total depth of well was 6,510 feet, and after being bailed down 1,500 feet, the fluid began blowing out. The first hour's gauge was 744 bbls. and it made 12,293 bbls. in 20½ hours. The gas volume was estimated at 10,000,000 feet. No. 2 E. Trosper, SE cor. NE NE, Section 14-11-3w, on the west side of the pool, was bailed down 1,000 feet and the gates opened for a production test. The total depth is 6,508 feet. After the well blew a stream of crude oil over the top of the derrick the operators shut it in rather than flood the only separator on the lease. The production was estimated at 15,000 bbls. a day. New separators were being installed and a production test will be taken in a few days. The last well completed on that day was No. 4 B. Johnson, NW cor. NE NW, Section 25-11-3w, on the southwest side of the pool. After being bailed for more than a day it started blowing mud and oil. The total depth is 6,449 feet. The first hour's production was 182 bbls., the second 198 bbls. and the first 12 hours' gauge was 2,334 bbls. from Simpson sand at 6,350-6,449 feet. The new well is one location west of the No. 1 B. Johnson, which was formerly the largest producer in the pool and the first well to gauge 1,000 bbls. an hour.

The next day the same company completed two more wells on the same lease. No. 8 N. Emerson, NW cor. SE SW, Section 30-11-2w, in the south part of the pool, was bailed down the day before and opened early in the morning. The first hour's production was 289 bbls., the second 177 bbls. It made 4,052 bbls. the first 23¼ hours from sand at 6,378-6,530 feet. Gas was estimated at 12,500,000 feet. No. 10 N. Emerson, SE cor. NE SW, Section 30-11-2w, was estimated to have more than 75,000,000 feet of gas, and it made 855 bbls. of oil in 18 hours and 20 minutes. The well was producing from the Simpson sand at a total depth of 6,392 feet. Same company's No. 1 C. E. Trosper, NE cor. SE, Section 11-11-3w, made 8,537 bbls. the first seven hours and was shut in when it started showing water.

The showing of oil in the wildcat test east of the main Oklahoma City Pool, by the Ryan Consolidated Petroleum Corp. has not been tested as the crew is landing the casing just above the sand. The oil showing was reported to be in the Detrital sand at 6,547-58 feet.

The Magnolia Petroleum Co.'s No. 1 Johnston, NE cor. SW, Section 35-13-3w, several miles north of Oklahoma City, was drilling at 6,325 feet. A showing of gas was found at 6,283-90 feet in what some believed to be the Peru sand.

Cromwell-Franklin Oil Co.'s No. 2 Thompson, SW cor. NW, Section 15-12-3w, just north of the state capitol, was coring at 4,394 feet.

George D. Warr, trustee's No. 1 Castle, SW cor. NW, Section 20-11-3w, a wildcat a few miles west of the main pool, south of Oklahoma City, was drilling at 5,350 feet.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW, Section 17-13-3w, Oklahoma County, a wildcat, was drilling in shale at 5,085 feet.

J. F. Cuniff and Pandem Oil Co.'s No. 1 St. Joseph's Orphanage, NE cor. SE, Section 17-12-4w, Oklahoma County, west of Bethany, has cemented 9-inch casing at 5,950 feet and was shut down.

### Fee for Town Lot Drilling

The Oklahoma City Council has passed an ordinance charging a $1,000 fee for each location for a well inside the city limits. The fee is being collected to relieve the general taxpayers from the burden of paying for the cost of controlling and supervising the drilling of wells in the city limits. The fee was set by the city to provide funds to pay inspectors to check up on the drilling activities and enforce the rules relative to fire and other damage hazards. Oil operators are expected to submit a list of rules and regulations to the city council which are scheduled to be passed next week. A special committee is drafting the rules and regulations headed by E. M. Fry, city manager.

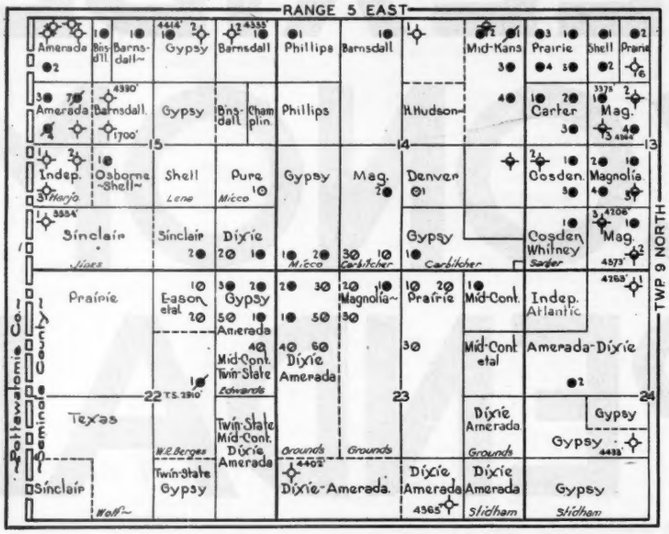
Wirt Franklin Petroleum Corp.'s No. 1 Wright, NE cor. NW, Section 2-11-3w, found a showing of oil and gas at 6,240 feet. The test is a mile northwest of any other oil production and will help prove other locations near the city limits.

### Greater Seminole

South Earlsboro Pool has 17 completed wells. The estimated daily potential of the pool May 16 was 42,500 bbls. The discovery well in the area was drilled about a year ago by the Amerada Petroleum Corp. and others in the SE cor. SW NE Section 22-9-5, and was considered a community well. It found the Wilcox sand to be structurally high and made a small well. With these indications that the area might produce oil, the Amerada Petroleum Corp. moved to the NE cor. NW Section 24-9-5 and drilled a dry hole in the Wilcox sand. The company held considerable acreage in the vicinity of the first well and decided to test the area again and drilled the next test in the SE cor. NE NE Section 22-9-5, which resulted in an 8,500-bbl. well in the Wilcox sand. This well started the development in a real way.

The South Earlsboro Pool has what is considered by many to be the largest well in the Seminole district and the second largest well in the Greater Seminole. The No. 2 J. Grounds, NW cor. Section 23-9-5, after a shot made 14,800 bbls. in 24 hours. The east offset to the discovery well drilled by the Amerada Petroleum Corp. on the same lease with the big well is No. 1 J. Grounds, NW cor. NW NW Section 23-9-5. It had an initial production of 11,700 bbls. The two

(Continued on Page 159)




*The above plat shows the development in the South Earlsboro Pool, on May 17. The largest well in the Seminole area is the Amerada Petroleum Corp.'s No. 2 J. Grounds, NW cor., Section 23-9-5, which made 14,800 bbls. in 24 hours. The pool was developed on geology after it had been practically surrounded with dry holes.*

## WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

**NORTHERN OKLAHOMA**

**ALFALFA COUNTY**

| Company, farm and location— | Remarks: |
|---|---|
| Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w | Cleaning out 1,232 ft. |
| J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w | Rigging up standard tools 4,660 ft.; cleaning out. |

**BECKHAM COUNTY**

| | |
|---|---|
| Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w | Rig. |
| Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w | Shut down 2,402 ft. |
| Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w | Shut down 1,575 ft. |

**BLAINE COUNTY**

| | |
|---|---|
| Lowen et al's No. 1 Unknown, NW cor. SW NW Sec. 17-16-11w | Spudded and shut down. |
| Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 12-19-10w | Drlg. 3,060 ft. |

**CADDO COUNTY**

| | |
|---|---|
| W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w | Shut down 3,394 ft. |

**CLEVELAND COUNTY**

| | |
|---|---|
| Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1 | Drlg. 5,780 ft. |
| Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w | Shut down 3,130 ft. |
| Phillips Petroleum and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w | Wilcox 7,716-20 ft., water; plugging back to 5,000 ft.; shut down. |

**COAL COUNTY**

| | |
|---|---|
| A. M. Van Orden's No. 1 Jamison, SE NW Sec. 31-1-9 | Drlg. 395 ft. |
| Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. tion 26-3-9 | Location. |
| W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e | Shut down 2,975 ft. |

**COMANCHE COUNTY**

| | |
|---|---|
| V. Wright's No. 1 Indian Land, SE SW Sec. 29-2-9w | Swabbed 15 bbls. 1,929-34 ft.; shut down. |

(Continued on Page 207)

# "We changed back to Gargoyle Lubricants *because*..."

**Benefits of correct Lubrication (Gargoyle Lubricants and Vacuum Oil Company Methods)**

Fewer shutdowns for repairs
Minimum friction—greater efficiency
Less carbon—less cleaning
Less wear—reduced depreciation
Perfect piston seal
Minimum oil consumption.

**FROM**
**VACUUM OIL COMPANY**
**FILE No. 1061**

Gargoyle D. T. E. Oils have been used for the complete lubrication of a 600-h.p. Diesel engine in this western power plant for a number of years.

A mechanical inspection is made annually. With Gargoyle lubricants the following conditions were always found:

Complete oil film on all rubbing surfaces
Pistons and cylinders clean
Piston rings free in their grooves
No stuck rings
Very little wear

Another lubricant was tried out in this engine for 90 days. Examination of the cylinders at the end of this period showed that the top rings on each piston were stuck and heavy carbonaceous deposits were found in the cylinders.

Naturally the management quickly changed back to Gargoyle D. T. E. Oils.

FILE No. 1061

**Diesel Engine Lubrication**—Many Diesel and oil engine operators have found this technical treatise particularly helpful in lubricating their equipment. We will be glad to send you a copy on request.

OFTENTIMES operators have been surprised to find that, by changing to Gargoyle lubricants, the undesirable conditions they have learned to expect even from good oils disappear or are minimized.

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**Lubricating Oils**

**The world's quality oils for plant lubrication**

# Vacuum Oil Company

**HEADQUARTERS: 61 BROADWAY, NEW YORK**

BRANCHES AND DISTRIBUTING WAREHOUSES THROUGHOUT THE COUNTRY

# Kansas Hits New Peak of Production

## Average for Week Was Close to 131,000 Bbls. a Day With Big Pools Curtailed. Proration Continued

By W. A. Spinney
*Staff Correspondent, Kansas Fields*

Oil production in Kansas reached a new peak for the year in the week ending May 17. The daily average was 131,000 bbls. The increase is mostly in the Voshell Pool, in McPherson County, which has a potential of 60,000 bbls. daily, while the pool actually produced only 23,000 bbls. daily. Proration agreements were continued in the Schurr Pool, in Rice, for another 60 days from June 1.

A meeting of operators interested in the Schurr Pool in Rice County, was held Friday, May 16, in Wichita, Kans., and extended the proration plan to August 1. Pipe line companies gave the operators little encouragement. There is a limited market for crude oil at this time. It was decided to allow the five producing wells now in the pool to produce as much oil as the pipe line facilities will handle. New drilling operations will be limited to one test on each 80 acres. A period of 15 days will be allowed to swab each well before it is put to pumping through 2½-inch tubing.

The five completed wells in the pool have a potential output of better than 5,000 bbls. a day. The only pipe line in the field is the Independent Oil & Gas Co.'s 3-inch line which is about 1½ miles long, running from the pool to a loading rack at Raymond. The pipe line has been handling 200 bbls. a day, with an estimated capacity of 3,000 bbls. a day.

The Prairie Oil & Gas Co. advises through its representative, H. G. Fitzpatrick, that it has no intention of building a pipe line into the Schurr Pool, at this time, although the company has made a tentative survey of such a pipe line.

Under the new proration agreement the Vickers Petroleum Co. is allowed to start only one of its tests offsetting the Allison-Fitzwilliam Petroleum Corp.'s new producer.

### Developments in Schurr Pool

Development work in the Schurr Pool, in Rice County, is starting. Rigs for three more tests are being moved into the area, two by the Vickers Petroleum Co. and one by the Independent Oil & Gas Co. Vickers Petroleum Co.'s tests are located in the NE cor. NW SE and NW cor. NE SE, Section 21-20-10w. Independent Oil & Gas Co.'s new well is located in the SE cor. SW NE, Section 10-20-10w. These new tests are offsets to the Allison-Fitzwilliam Petroleum Corp. and Slick, Pryor & Lockhart's east extension well in the same section. It is expected these rigs will be built, but it is understood the tests will not be spudded until June 1, when the curtailment plan governing the pool expires. Allison-Fitzwilliam and others' No. 1 Mezger, SW cor. SE NE, Section 21-20-10w, swabbed 835 bbls. in 10 hours, and was shut down for tankage. It was averaging about 65 bbls. an hour.

The wildcat test of Rush Oil Co.'s, Barefield and others, No. 1 Gatewood, NW cor., Section 4-15-20w, in the southwestern part of Ellis County, has a showing of oil in the Oswald formation at 3,355 feet. A proration test is to be made.

### Voshell Developments

In the Voshell Pool, in McPherson County, the Mid-Kansas Oil & Gas Co.'s Voshell lease in the W half NE, Section 9-21-3w, has an estimated potential of 12,000 bbls. a day from eight wells. No. 8 Voshell, NE cor. SW NE, Section 9-21-3w, was drilling in Silicious lime after oil rose 1,200 feet in the hole from the Wilcox sand at 3,275-90 feet. While drilling deeper the oil rose 3,000 feet in the hole. No. 6 Voshell, SW cor. NE, Section 9-21-3w, was tested and swabbed 1,325 bbls. the first 24 hours and 1,560 bbls. the second 24 hours, from the Silicious lime at 3,380-90 feet.

The Prairie Oil & Gas Co.'s recent gas well in the north end of the Voshell Pool is drilling deeper. The well was No. 3 Krehbiel, NE cor. SE, Section 4-21-3w. It found 20,000,000 feet of gas at 3,012-64 feet and was drilling ahead at 3,160 feet May 16. Many express the opinion it may be one of the largest wells in the north extension. The gas will be bradenheaded when the oil sand is topped.

Independent Oil & Gas Co.'s No. 1 Moorehouse, SW cor. NW SW, Section 3-21-3w, McPherson County, which extended the production a quarter mile north in the Voshell Pool, swabbed 1,100 bbls. in 24 hours. The oil was found in the Wilcox sand at 3,395-97 feet and in the Silicious lime, the total depth being 3,405 feet.

The wildcat test of Helmerick & Payne southeast of the Voshell Pool was a disappointment to the owners. The casing is being pulled to abandon after finding a hole full of water in the Wilcox sand. The test is located in the NW cor. NE NW, Section 22-21-3w, and got the Wilcox sand at 3,549-54 feet. In the Ritz Pool in McPherson County, The Texas Company's No. 2 Munn, C NE, Section 12-20-2w, was drilling in the chat horizon. The chat was found at 2,924 feet and the oil at 2,969-73 feet, where it made 500 bbls. a day. The well is located about a quarter mile south of the Shell Petroleum Corp.'s No. 1 Miller, a 4,000-bbl. producer, and the largest producing well in the State.

Operators owning acreage in the area surrounding the Mid-Kansas Oil & Gas Co.'s No. 1 Pitts, in Section 2-19-2w, McPherson County, 6 miles north of the Ritz Pool and a mile north of the old Decker gas pool, have not as yet announced any plan for the development of this district. It was proposed to drill one test on each 40 acres, but this agreement has not been made. The Mid-Kansas Oil & Gas Co.'s No. 1 Pitts is pumping about 140 bbls. a day oil and 60 bbls. of water.

New tests are expected to be started by the Deep Rock Oil Corp. and Twin State Oil Co. offsetting the Prairie Oil & Gas Co.'s No. 1 Davidson, in Section 4-16-11w, northeastern Barton County. It is the only producing well in that county and has been pumping 20 bbls. a day. The new well is estimated to be a 250-bbl. well. Operators have been unable to operate the well to its full capacity owing to the lack of a pipe line connection.

The Sinclair Oil & Gas Co.'s No. 1 Kamas, SW cor. Section 28-31-1w, Sumner County, northwest of Wellington, and offsetting the discovery well in the area, found the chat from 3,667-91 feet and made 182 bbls. on the gauge of May 16. It is the second well completed since the discovery well drilled by Slick, Pryor & Lockhart was plugged back to the chat after finding water in the Wilcox sand.

Empire Oil & Refining Co. is starting another test southeast of the Haverhill production in Butler County. The new location is No. 1 Crowley, NW cor. SE Section 11-28-5. The new test is on a block of 2,500 acres which the Empire geologists consider very favorable.

Barnsdall Oil Co. has announced another location in the Lewis district in Edwards County, east of the producing wells. The test is No. 1 Carroll in the C SW Section 32-25-17w. Barnsdall Oil Co. has approximately 10,000 acres under lease in this block.

Vickers Petroleum Co. is moving in material for a rig east of Wichita in NE cor. NW NE Section 30-27-2, Sedgwick County, offsetting the discovery well of Fisher & Lauck. It is the second new test for the area. Fisher & Lauck's No. 2, SW cor. SE Section 19-27-2, is spudding.

### Sedgwick's Production

The daily average production of Sedgwick County for the week ending May 16 was 19,200 bbls. with all the wells in the Valley Center Pool and the deep sand production in the Greenwich townsite curtailed.

T. C. Johnson and others' No. 1 Petrie, SW cor. SE Section 35-26-1w, on the northwest edge of Wichita, Sedgwick County, was a failure and is being plugged and abandoned at a total depth of 3,542 feet.

### Barber Test Resumes Drilling

After fishing for about two months in Phillips Petroleum Co. and Robertson & Hinkle's No. 1 Powell, SE cor. Section 11-32-10w, an important test on the east side of Barber County, the well has resumed drilling at 4,145 feet. The test has had some showing of oil and gas in shallow sands, which indicates it may be situated on a regional high, and is considered to be a favorable looking prospect. The Phillips Petroleum Co. purchased a half interest in the well and block from Robertson & Hinkle when it was 4,000 feet deep.

The Independent Oil & Gas Co.'s No. 1 Doles, in Section 31-25-4w, a Reno County wildcat, was showing oil. The test was looking favorable from a structural standpoint. Only a thin section of Mississippi lime was found. The top of the Viola was at 3,997 feet, where a core was taken to 4,002 feet, with oil saturation. The hole was drilled to 4,011 feet, which is considered the top of the Wilcox sand, where drilling was shut down to land 8-inch casing on top of the Viola lime, preparatory to testing the oil showing.

In the southeastern part of Reno County, Tatlock and others' No. 1 Tonn, C NW NW Section 17-25-4w, found the top of the chat at 3,529 feet, where it had 500,000 feet of gas. The crew was landing the 6-inch casing on top of the chat.

### Greenwood Is Busy

Greenwood County continues to be one of the most active counties on the east side. Empire Oil & Refining Co.'s No. 8 C. Patterson, NE cor. SE Section 36-23-11, is estimated at 120 bbls. from the Bartlesville sand at 1,744-84 feet. The well will be shot and cleaned out before a production is made.

Prairie Oil & Gas Co. and others expect to complete another well in a few days on the Newhouse lease in Section 1-24-11. Harwood Oil Co.'s No. 1 Good, SW cor. NW NE Section 36-25-9, Greenwood County, was a failure. The test found water at 2,149-52 feet, and is being abandoned. A showing of oil and water was also found at 1,830-40 feet.

### Barber County

Barbara Oil Co. is moving the tools in for No. 1 Hamblin, C SW NW, Section 24-33-13.

### Butler County

Gypsy Oil Co. has the cellar dug for No. 1 Osborne, NW cor. SE, Section 22-26-3. Lario Oil & Gas Co. made location for No. 1 Gelwick, SE cor. NW SW, Section 6-27-4. Aladdin Oil Co. and others' No. 1 Metzger, C NW SE, Section 23-28-3, is a rig under construction. National Refining Co.'s No. 1 Shively, C NW SW, Section 25-23-6, is dry and abandoned at 2,582 feet. Colorado-Kansas Petroleum Co.'s No. 2 Holcomb, NE cor. SW NW, Section 8-29-4, is dry and abandoned at 2,235 feet.

### Cowley County

Trees Oil Co. made location for No. 1 Hanlen, SE cor. NE NW, Section 35-30-4. J. A. Hull has the rig on the

(Continued on Page 162)

## WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

**BARBER COUNTY**

| Company, farm and location— | Remarks: |
|---|---|
| Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w | Rig on ground. |
| Skelly Oil Co.'s No. 1 Temple Ranch, SW NE Sec. 13-34-15w | Drlg. 5,454 ft. |
| Phillips Pet. Co.'s No. 1 Powell, SE cor. SE Sec. 11-32-10w | Shut down 4,023 ft. |

**BUTLER COUNTY**

| | |
|---|---|
| Aladdin Pet. Co.'s No. 1 Metzger, NW SE Sec. 23-28-3 | Rig. |
| Gypsy Oil Co.'s No. 1 Osborne, NW SE Sec. 22-26-3 | Rig on ground. |
| T. C. Johnson's No. 1 Heath, NE SE Sec. 12-27-3 | Drlg. 350 ft. |
| Elam et al's No. 1 Hopkins, SE SW SE Sec. 26-23-4 | Drlg. 1,785 ft. |
| Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7 | Shut down 50 ft. |

**CHASE COUNTY**

| | |
|---|---|
| Chase County Gas Co.'s No. 1 Weirhoff, SW NW Sec. 31-19-6 | Rig. |
| Urschell et al's No. 1 Lippa, C SW SW Sec. 27-18-6 | Drlg. 2,020 ft. |
| Steinbuckel et al's No. 1 Stephenson, NE SW Sec. 4-20-6 | Shut down 1,700 ft. |
| Steinbuckel et al's No. 1 Cook, SE cor. Sec. 21-19-8 | Drlg. 2,560 ft. |

**CHAUTAUQUA COUNTY**

| | |
|---|---|
| Valentine Oil Co.'s No. 1 Patterson, NW SE SW Sec. 2-33-9 | Shut down 1,690 ft. |

**CLAY COUNTY**

| | |
|---|---|
| Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3 | Shut down 50 ft. |

**COFFEY COUNTY**

| | |
|---|---|
| Kimsay's No. 1 Baker, SE cor. Sec. 24-22-13 | Shut down 50 ft. |

**COWLEY COUNTY**

| | |
|---|---|
| Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4 | Rig. |
| Roth & Faurot's No. 1 Adams, C SW NE NE Sec. 19-32-8 | Show oil 2,120-44 ft. |
| Prairie O. & G. Co.'s No. 1 Dosbaugh, SE cor. Lot 27, Sec. 18-32-8 | Drlg. 2,908 ft. |

**DICKINSON COUNTY**

| | |
|---|---|
| Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2 | Drlg. 50 ft. |
| Emery-Curtis & Bryan's No. 1 Hevner, NW SE Sec. 31-13-3 | Shut down 2,365 ft. |
| Cross' No. 1 Sanden, NE cor. Sec. 12-15-2 | Rig. |
| Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2 | Shut down 50 ft. |
| Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4 | Shut down 2,935-43 ft.; water. |
| E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1 | Shut down 1,768 ft. |

**DOUGLAS COUNTY**

| | |
|---|---|
| Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21 | Shut down 880 ft. |
| Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17 | Shut down 1,800 ft. |

**EDWARDS COUNTY**

| | |
|---|---|
| Dixie and Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w | 4,647-90 ft. water; drlg. 4,903 ft. |

(Continued on Page 153)

OFFICE AND EXTERIOR OF PLANT

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*General views of interior of plant.*

F. E. FISHER, V.P. AND G.M., C. B. FOWLER, SEC'Y.-TREAS.

# Darst Creek Developments Startling

## Three Wells Stop Flowing, All Located in Section Where Crevice Conditions Are Thought to Exist. New Tests in Pettus Area

By B. D. Stevenson
*Staff Correspondent, Southwest Texas Fields*

SAN ANTONIO, Tex., May 19.—Cosden's No. 1 McKinney, 2½ miles west of the Pettus Field which tested 20 joints of oil on a drill stem test as reported last week was still waiting on cement to set, and H. S. Morgan's No. 1 Perry which was expected to extend the Bruner Field to the northeast more than a mile was still untested late in the week. Startling happenings in the Darst Creek Field occurred when the Empire Gas & Fuel Co.'s No. 1 Knoblock stopped flowing and was followed the next day by Gulf Production Co.'s No. 1 Knoblock and Sun Oil Co.'s No. 6 Knoblock each of which stopped flowing.

Empire Gas & Fuel Co.'s No. 2 Knoblock lost three pits full of mud at 2,633 feet and some believe that this was responsible for No. 1 Knoblock stopping its flow. Gulf Production Co.'s No. 1 Knoblock was originally a 7,000-bbl. well and the Sun Oil Co.'s No. 6 Knoblock which offsets Empire's No. 1 was also a big well. They stopped flowing the next day after the Empire well stopped and the lost returns in Empire's No. 2 is thought responsible for the actions of all three wells by some who have studied the field. The wells are all located in the same part of the field where crevice conditions are thought to exist.

While H. S. Morgan's No. 1 Perry, a mile northeast of production in the Bruner Field, was still an unproven proposition Gulf Production Co.'s No. 2 Briscoe, halfway between the Morgan test on the northeast and the Humble's production on the southwest and a little west of its No. 1 Briscoe, topped the chalk at 2,444 feet but found only 81 feet of it and this will bring it into the Edwards higher than No. 1. It gives rise to the expectation that No. 2 will be the best well. In any event these wells are extending the field to the northeast.

### Wildcats Watched

So far as the rest of the Luling area is concerned most of the interest is in watching a number of wildcats to see whether they are going to get the chalk high or low and give any indication of new production or extensions of proven areas. In the Darst Creek Field, however, the Louisiana Oil & Gas Co. brought in a rather big well, No. 3-A Dix-McKean, coming in for 12,000 bbls. at 2,301 feet. It was surpassed, however, by the Gulf Production Co.'s No. 3-A Dix-McKean which it offsets, and which came in for 22,200 bbls. daily at 2,223 feet. Both of these wells are near Magnolia Petroleum Co.'s No. 1 Roamel which came in some weeks ago extending the field to the west and making oil at the rate of around 42,000 bbls. a day. Louisiana Oil & Gas Co.'s No. 3-A Dix-McKean is an east offset to the Magnolia well and Gulf's No. 3-A Dix-McKean is a little east of the Louisiana Oil & Gas Co.'s test.

A feature of the Darst Creek area is the action of the Magnolia Petroleum Co. in starting No. 1 Manford in the Ed Pettus Survey. This location is quite a little to the north of the line of play in that district, and a wildcat proposition. Two other propositions are being watched with interest as they may furnish surprises. Penn-Tex is moving in to start No. 1 Roamel, 1,500 feet northwest of Magnolia's No. 1 Roamel which came in for 42,000 bbls. Also W. H. Gee is rigging up to start No. 1 Denman in the A. S. Emmett Survey which is considerably to the west or northwest of present production.

### Pettus Area

While Cosden Oil Co. is waiting for cement to set in its No. 1 McKinney, a mile west of Pettus, everybody else down there is getting ready to drill offsets. If the Cosden well comes in an oil well it will immediately start a number of new tests. Union Producing Co. and Humble Oil & Refining Co. own all the offsets to each other in the spot east of the town where production was developed. They will drill what they want and quit. Humble's No. 2 McKinney ran 1,259 bbls. of oil into the pipe line during the week ending May 11 and Union Producing Co.'s No. 3 Ray ran 1,812 bbls. into the pipe line the same week. Grayburg's No. 1 Kimball, a few miles to the west, is still shut down for repairs at 3,337 feet.

It may be some months before the Pettus area gets developing under full swing but it is the spot most expected to develop news during the next several months. Counting Cosden Oil Co.'s No. 1 McKinney as a foregone conclusion producer there are eight producing spots started in that part of Bee and Goliad County around Pettus and at varying depths. Morgan's No. 1 McKinney, 3 miles north of the town, Cosden's No. 1 McKinney, 1½ miles west of town, seven producers of the Union Producing Co. and the Humble Oil & Refining Co., a mile east of the town, F. P. Zoch's No. 1 Kauffman, 9 miles east of town; Union Producing Co.'s No. 3 Ray, 3½ miles east of town; Union Producing Co.'s No. 2 Ray, the original discovery gas well of the region, 2 miles north of the town of Pettus and Nichols' No. 2 Hicks, 3 miles south of Pettus, and Nichols' No. 3 Hicks, near No. 2 but in an entirely different sand and showing for 20,000,000 feet of gas. While some of them are located close together they are in different sands or on different lines of production so there are eight possibilities in the Pettus area any one or all of which may develop to major importance.

This situation is responsible for the big leasing campaign going on in that territory for some time and is getting more intense. Scott Townsend of Fort Worth has completed a block of 4,000 acres near Kennedy in Karnes County calling for a test inside of 90 days; Humble and Shell have leased around the town of Green in Karnes County; Edwin M. Jones of San Antonio has leased in central Bee County near Tuleta; Houston Oil Co. has taken a block northwest of Beeville in Bee County; and there are numerous other deals. Prices run all the way from $1 an acre to $8 an acre. Sun Oil Co. is acquiring a block in eastern Bee County.

### Coastal Deep Test

W. L. Pearson is arranging to drill a 5,500-foot test in the Saxet Field on the south side of Nueces Bay and south of the White Point Field which is on the north side of the bay. The location is on the east 240-acre tract of the Donigan property, and this test is one of three or four to be drilled in that part of the country in Nueces County, all to go to 5,000 feet or deeper. Houston Oil Co. has less than 90 days to start its 5,000-foot hole on the Kingston property west of Corpus Christi; Kelly and others will drill a 5,000-foot test on the Doctor Harrell property to start before June 1. The Harrell property lies west of the Donigan property and the Kingston property lies east of the Donigan property. Another block is being assembled south of the Kingston property for still another 5,000-foot test. This is a total of four tests to go to 5,000 feet or deeper in the Saxet Field.

This deep test mania is largely inspired by the results in the Refugio Field and the spreading out of sands in the Pettus area. Operators are becoming convinced that deep sands in the coastal territory will furnish many pools.

### Agua Dulce Deep Test

Houston Oil Co.'s No. 1 M. E. Brooks, 330 feet from the north and east lines of fractional Section No. 29, Benton Pasture Subdivision, south of Agua Dulce and 3 miles southwest of the discovery gas well of the Agua Dulce Gas Field, made a drill stem test of a sand at 1,930 feet which showed to be dry and free of water. Another sand was cored at 1,960 feet and two more sands were cored below 2,000 feet before the bit reached a depth of 2,240 feet. This test is now drilling at 2,318 feet and will be carried much deeper before abandonment. Some interest is now being shown in the succession of sands being found in this test and the fact that all do not carry water possibly indicates a structural condition in this gas field.

The leasing play started week before last in western Nueces County by the Shell Petroleum Corp. has reached an extent of 20 miles or more in length. Beginning north of Robstown near the Nueces River, the play has continued southward to a point well to the southeast of the town of Bishop. The Shell, Humble and Gulf buying has at least temporarily subsided somewhat after leasing some 25,000 acres along this line of play, but the other companies are just now getting in on this play and things continue active along this line with leases getting higher in price and harder to get. H. H. Weinert of Seguin has joined in and has taken several thousand acres in leases along the line, as have a number of other individual operators. Weinert started off his buying with an offer to the farmer of $3 per acre for his lease. Considerable royalty buying is also noted along this line of play, especially under the major oil company holdings. The greater portion of the royalty sold to date has averaged a $4 base.

**SOUTHWEST TEXAS**

| | |
|---|---|
| Branyon | 23 |
| Bruner | 20,045 |
| Buchanan | 263 |
| Dale | 356 |
| Darst Creek | 25,796 |
| Kingsville | 112 |
| Lorremore | 30 |
| Luling | 9,695 |
| Lytton Springs | 866 |
| Manford | 500 |
| McMullen County | 35 |
| Medina County | 22 |
| Mirando | 10,614 |
| Pettus | 3,101 |
| Somerset | 1,546 |
| Taylor | .... |
| Yoast | 530 |
| Total Southwest Texas | 73,534 |
| Week ending May 10 | 70,579 |
| Increase | 2,955 |

### San Patricio Deep Test

George B. Pickett and others' No. 1 Baldwin, 5 miles east of Sinton and 1,200 feet south of the SE cor. of the R. O'Neil Survey and on a line between Refugio Field and Whites Point, is down to a depth of 2,410 feet and waiting for the flood waters around Sinton to subside before resuming operations. Mr. Pickett has cored his changes in formation and particularly each sand with a view of making a log of this test that will be of future value in determining subsurface geology along the White Point anticline. In addition to taking cores and preserving samples of cuttings of the formations, Mr. Pickett purposes securing samples of the water from each water-bearing formation and through chemical analysis of each sample of water be enabled to correlate subsurface strata correctly in this area. The carefully preserved log of this deep test will be of great interest and value.

### Kendall County

F. B. Sterling has not completed rigging up his No. 1 Willie Werner in Kendall County to test it on the pump but is continuing with arrangements and in the meantime has taken over No. 1 Gaulds in the G. B. Owens Survey, 4 miles west of Kendalia and is moving in a heavy rig which is understood to mean that Kendall County will get a deep test that will penetrate the Pennsylvania formation. The tests drilled thus far in that section have been done with light spudders and small rigs, No. 1 Willie Werner now standing at 914 feet and with enough oil showing to warrant testing it on the pump. It is supposed to be in the top of the Pennsylvanian. A heavy rig means going into the Pennsylvania to see what is there.

Two new wildcat locations have been made in Kendall County. John W. Mowinkle has made location for his No. 1 Kasten, a half mile southwest of the Sterling No. 1 Willie Werner and it is expected it will be started soon. The other new location is R. M. Perkins' No. 1 Lawhon, 1½ miles southwest of Kendalia. F. B. Sterling has completed building 750 bbls. of storage preparatory to testing his No. 1 Willie Werner on the pump.

### Laredo County

Two oil wells, one for 300 bbls. a day and the other for 250 bbls., were completed in the Laredo territory, both in the Cuellar Pool near the Jennings gas field in Zapata County. Two other tests are standing partly filled with oil and there is a little new interest in the territory east of the Jennings gas field known as the Escobas area where some shallow oil has been found.

O. W. Killam got the 300-bbl. well in his No. 22 Cuellar and also got the 250-bbl. well in his No. 16 Cuellar. No. 22 was completed in sand at 1,528-43 feet and No. 16 in sand at 1,534-47 feet.

The two wells standing in oil are the French Oil Corp.'s No. 1 Rosa Benavides in Webb County at the north end of the Cole Field with 1,000 feet of oil in the hole and the R. F. Blankenship's No. 2 Montemeyor in Zapata County with 400 feet of oil in the hole at 1,323 feet. No. 2 Montemeyor is in the territory east of the Zapata gas field where H. Muckelroy, Jr., brought in the discovery oil well several months ago.

O. W. Killam's No. 18 Bruni, the deep test in the Cole Field east of the town of Bruni, was last reported in shale at 4,035 feet, and the Cole Petroleum Co.'s No. 68 Benavides at 4,169 feet, and location is announced by the company for No. 69 Benavides in Block 6 of Survey 660, the same survey in which No. 68 is located.

### COMPLETIONS

#### Darst Creek—Guadalupe County

The Texas Company's No. 8 Dallas Wilson, 150 feet from west line, 450 feet from south line of tract in the J. C. Darst Survey; total depth 2,602 feet; swabbed 1,150 bbls.

Sun Oil Co.'s No. 7 Knoblock, 1,366 feet from southwest line, 150 feet from northwest line of tract in the J. R. Robinson Survey; total depth 2,571 feet; flowed 1,710 bbls.

Humble Oil & Refining Co.'s No. 5 Yates Wilson, 40 feet from south line, 1,572 feet from east line of tract in the J. C. Darst Survey; total depth 2,637 feet; pumped 646 bbls.

Abercrombie Drilling Co.'s No. 2 Dix

McKean, 150 feet from north line, 150 feet from west line of 20-acre tract, 450 feet southeast of Magnolia's big well; total depth 2,552 feet; flowed 1,500 bbls.

**Jennings Pool—Zapata County**

O. W. Killam's No. 17 Cuellar, 4,423 feet northwest line, 1,942 feet northeast line Cerrito Blanco grant; total depth 1,481 feet; flowed 100 bbls.

**Schoolfield-O'Byrne—Duval County**

Magnolia Petroleum Co.'s No. 1 Hahl-Strip, 3,890 feet east line, 600 feet south line Survey 61; total depth 2,341 feet; flowed 100 bbls.

## ABANDONED TESTS

**Darst Creek—Guadalupe County**

J. S. Abercrombie and Harrison Oil Co.'s No. 7 Thomas Dix, 150 feet from north and west lines of tract in the J. R. Robinson Survey; dropped; duplication.

**Cole Pool—Webb County**

E. H. Buckner's No. 1-A Rosa Benavides, 660 feet northwest line, 660 feet northeast line, Block 5, Survey 14; total depth 2,414 feet; abandoned.

Magnolia Petroleum Co.'s No. 2 King-Harper, 660 feet north and east lines, Block 2, Survey 323; location abandoned.

## NEW LOCATIONS

**Darst Creek—Guadalupe County**

Abercrombie-Harrison's No. 3 Dix McKean, 450 feet from south line, 425 feet from west line 20-acre tract in the J. R. Robinson Survey; total depth 2,050 feet; drilling in Taylor marl. Abercrombie-Harrison's No. 4 Thomas Dix, 150 feet from north line, 150 feet from east line 20-ac. tract in the J. R. Robinson Survey; total depth 1,200 feet; drilling in shale. W. H. Gee's No. 1 Denman, 2,684 feet east of west line, 3,350 feet north of south line of the A. S. Emmett Survey; location. Gulf Production Co.'s No. 3-A Dix McKean, 150 feet from south line, 150 feet from east line 20-acre tract in the J. R. Robinson Survey; location. Humble Oil & Refining Co.'s No. 14 Denman, 1,422 feet from south corner, 150 feet from east line of A. S. Emmett Survey; location. Louisiana Oil & Refining Co.'s No. 3-A Dix McKean, 875 feet from north line, 150 feet from west line 74-acre lease in the J. R. Robinson Survey; location. Magnolia Petroleum Co.'s No. 2 Klein, 450 feet from north line, 150 feet from west line in the J. R. Robinson Survey; location. Penn-Tex Oil Co.'s No. 1 S. M. Roamel, 150 feet from south line, 1,400 feet east of 150-acre tract in the J. R. Robinson Survey; derrick.

**Bruner Pool—Caldwell County**

Gulf Production Co.'s No. 2 T. Briscoe, 1,750 feet east of west line, 150 feet south line of 100-acre lease in the P. McCarley Survey; total depth 2,350 feet; drilling in marl.

**Cole Pool—Duval County**

W. E. May's No. 1 Rosa Benavides, 150 feet southwest line, 150 feet southeast line Cole Subdivision Mariano Arispe grant, Block 4, Survey 22; derrick.

**Jennings Pool—Zapata County**

O. W. Killam's No. 17-B Cuellar, 150 feet south line, 150 feet southwest line Survey 277; location. O. W. Killam's No. 18-C Cuellar, 2,804 feet southeast of northwest corner, 150 feet southwest line Survey 278; derrick. O. W. Killam's No. 24 Cuellar, 2,926 feet northwest line, 150 feet northeast line Cerrito Blanco grant; location. O. W. Killam's No. 25 Cuellar, 3,226 feet northwest line, 150 feet northeast line Cerrito Blanco grant; location.

## DRILLING ACTIVITY

**Dobrowolski Pool—Bexar County**

Penn-Tex Oil Co.'s No. 1 Sandimeyer, 2520 feet east of west line, 1,120 feet north of south line in the M. Menchaca Survey, 8 miles southeast from San Antonio; spudding in.

**Bruner Pool—Caldwell County**

Humble Oil & Refining Co.'s No. 3 New, 150 feet from north line, 1,838 feet from west line of tract in the James Hinds Survey; total depth 2,390 feet; drilling in chalk.

**Buchanan Pool—Caldwell County**

Buchanan-Danciger's No. 2-A W. T. Cude, 150 feet from northeast corner of 21-acre lease in the William Spillers; total depth 1,150 feet; drilling. Ed Lange and others' No. 1 Geoffery, 745 feet south-north line, 150 feet east-west line of lease or 1,776 feet east-west line, 3,496 feet south-north line of survey in the C. M. Cannon Survey; total depth 1,100 feet; drilling at 1,100 feet.

**Aviator Pool—Webb County**

O. W. Killam's No. 1-V A. M. Bruni, 178 feet east line, 1,180 feet north line Block 22, Brown Subdivision, Albercas grant; total depth 2,850 feet; drilling.

**Carolina-Texas Pool—Webb County**

E. D. Claggett and Sam Evans' No. 1 Webster, 150 feet south line, 990 feet west line, Survey 684; total depth 24 feet; standing. W. R. Shankle's No. 2 Webster, 1,170 feet west line, 150 feet south line, Survey 684; rigging up.

**Cole Pool—Webb County**

South Texas Production Co.'s No. 1 S. Benavides, 200 feet northwest line, 150 feet southwest line, Myrtle E. Hale Subdivision, Block 18, Mariano Arispe grant, spudded in. French Oil Corp.'s No. 1 Rosa Benavides, 150 feet north line, 150 feet west line, Survey 659, total depth 2,352 feet; sand 2,344-52 feet; tested oil through tester. Morris Drilling Co.'s No. 2 S. Benavides, 289 feet northwest line, 150 feet northeast line, Myrtle E. Hale Subdivision, Block 431, Mariano Arispe grant, total depth 1,784 feet; preparing to drill deeper from 1,784 feet. O. W. Killam's No. 18 Bruni, total depth 2,875 feet, drilling.

**Charco Redondo Pool—Zapata County**

Mid-West Public Utilities' No. 1 Garcia, 450 feet southwest line, 450 feet southeast line of M. P. de Garza tract, Block 33, Pedernal grant, total depth 920 feet; drilling. W. R. Duke's No. 2 J. M. Martinez, 415 feet southwest line, 500 feet northwest line, Duke Subdivision, Block 22, Charco Redondo grant, total depth 973 feet; standing. C. R. Moore & J. M. Moore's No. 1 Adela G. de Flores, 330 feet northwest line, 330 feet northeast line, E. M. Doty Oil & Gas Subdivision, Block 9, Chaco Redondo grant; location.

**Jennings Pool—Zapata County**

Trinity Drillers, Inc.'s No. 1 Trevino, 450 feet west line, 150 feet north line, Block 8, Survey 66; location. Trinity Drillers, Inc.'s No. 1 F. Cuellar, 150 feet northwest line, 150 feet east line, Block 12, Survey 65; location. Killam-Duggan's No. "C" 16 Cuellar, 150 feet north line, 150 feet southwest line, Survey 278, total depth 1,534 feet; sand; set 6⅝-inch casing 1,534 feet. O. W. Killam's No. 23 Cuellar, 150 feet northeast line, 282 feet northwest line of May & Holder 80-acre tract or 4,765 feet northwest line of Cerrito Blanco grant, total depth 100 feet; drilling. O. W. Killam's No. 22 Cuellar, 3,535 feet northwest line, 150 feet northeast line, Cerrito Blanco grant, total depth 1,470 feet; drilling. John J. O'Hern's No. 1 Garcia, 150 feet southeast line, 150 feet northeast line, Share 3, Fansler Partition, Comitas grant, total depth 1,000 feet; drilling. W. R. Shankle's No. 1 Cuellar, 61 feet northwest line, 200 feet southwest line, Block 15, Survey 65, total depth 200 feet; drilling. H. Muckleroy's No. 3 Trevino, 460 feet south line, 300 feet east line, Block 25, Survey 412; rigging up to drill deeper from 1,281 feet. Magnolia Petroleum Co.'s No. 3 Cuellar, 150 feet to northeast and southeast lines, Survey 245, total depth 3,960 feet; drilling. South Texas Production Co.'s No. 9 Measles and others, 3,830 feet southeast line, 660 feet northeast line, Cerrito Blanco grant, total depth 1,756 feet; drilling. Livingston & Twiss' No. 1 Trevino, 150 feet north line, 150 feet west line, Block 7, Survey 66, total depth 1,270 feet; drilling; sand 1,261-70 feet. F. M. Blair & F. M. Blair, Jr.'s No. 3 Trevino, 500 feet east line, 150 feet north line, Block 1, Survey 66; location. R. F. Blankenship's No. 2 Garza, 425 feet west line, 425 feet north line, Block 2, Survey 413, total depth 1,650 feet; standing; depth corrected. G. F. Owen's No. 2 Montemayor, 820 feet east line, 150 feet north line, Block 7, Survey 64, total depth 1,308 feet; sand 1,301-08 feet.

**Cole Pool—Duval County**

F. S. Bain & Miller I. Shaw's No. 1 S. Benavides, 1,950 feet west line, 180 feet north line, Survey 144; rigging up. Simms Oil Co.'s No. 9 Dinn, 660 feet east line, 660 feet south line of northwest of southeast of Survey 143; rigged up; standing. Humble Oil & Refining Co.'s No. 41 Kohler, 2,970 feet south line, 330 feet east line, Survey 165; location.

**Roma Pool—Starr County**

The Texas Company's No. 1 "B" V. C. de Guerra, 150 feet south line, 150 feet west line of north 1,173 acres, Share 92, Porcion 68 of Partition Porcion 67, 68, 69, 70, 71, 72, Jurisdiction of Mier, total depth 3,610 feet; drilling.

**Pettus Field—Bee County**

Houston Oil Co.'s No. 1 J. R. Beasley, center of Block 36, Pettus Townsite; spudding in. Houston Oil & Refining Co.'s No. 3 J. J. McKinney, 150 feet from west line, 1,200 feet south of No. 1 in the L. C. Randolph Survey; rigging up. Union Production Co.'s No. 9 George Ray, 150 feet from east line of survey, 1,450 feet south of north corner of the L. C. Randolph Survey; spudded in.

**Lasater Pool—Brooks County**

Houston Oil Co.'s No. 1 Holbein-Wormser in the Palo Blanco de Maguellas Survey, total depth 6,003 feet; plugging back.

**Cartwright Pool—Live Oak County**

Houston Oil Co.'s No. 1 R. Boothe, 3,000 feet from west line, 300 feet south line, in the M. B. Kilvin Survey, total depth 2,579 feet; drilling in shale.

**Agua Dulce Pool—Nueces County**

Houston Oil Co. of Texas' No. 1 M. E. Brooks in the Los Sauces grant, total depth 2,384 feet; drilling in shale.

**Nursery Pool—Victoria County**

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder, 1,634 feet south and east lines, 736 feet south and west lines in the D.L.&C. Survey, total depth 5,900 feet; heaving shale; plugged back and running perforated liner to test at 5,900 feet; testing sand.

**Darst Creek—Guadalupe County**

Empire Gas & Fuel Co.'s No. 5 Dowdy, 792 feet from north line, 150 feet from east line of tract in the J. C. Darst Survey; derrick. Same company's No. 2 Knoblock, 600 feet south line, 150 feet east line of 40-acre tract in the J. R. Robinson Survey, total depth 2,590 feet; drilling in limey marl. Gulf Production Co.'s No. 2-A Dix McKean, 150 feet from southeast and southwest lines of 20-acre tract in the J. R. Robinson Survey, total depth 2,517 feet. Louisiana Oil & Refining Co.'s No. 5 Thomas Dix, 500 feet from south line, 150 feet from east line of 50-acre tract in the J. R. Robinson Survey, total depth 2,496 feet; set casing. Magnolia Petroleum Co.'s No. 3-A M. E. Roamel, 450 feet north and south lines, 150 feet west and east lines of tract in the J. R. Robinson Survey, total depth 2,862 feet; bailed sulphur water; shut down. Same company's No. 1 A. J. Manford, 1,257 feet from southwest corner, 150 feet from southeast line of 210-acre tract in the southeast corner of the Edward Pettus Survey, total depth 1,400 feet; drilling in sandy shale. Sun Oil Co.'s No. 8 Knoblock, 150 feet from north and west lines of tract in the J. R. Robinson Survey; location. Same company's No. 2 Manford, 150 feet from southwest line of tract, 300 feet southeast of No. 1 well in the J. Hodges Survey, total depth 2,750 feet; coring Buda lime.

## WILDCAT OPERATIONS IN SOUTHWEST TEXAS

**ATASCOSA COUNTY**

| Company, farm and location— | Remarks: |
|---|---|
| Frontier Oil Co.'s No. 1 Gray, 425 ft. from S line, 2,586 ft. from W line of 902-acre tract in the N. Flores Sur., 3 miles SW from Somerset Field | T. D. 2,178 ft.; temp. abandoned. |

**BANDERA COUNTY**

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|---|---|
| Sun Oil Co.'s No. 1 F. E. Wisenhunt, 500 ft. from E line, 900 ft. from S line of tract, 8 miles NW from Bandera | Location. |

**BASTROP COUNTY**

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|---|---|
| Judge Batts and others' No. 1 Alexander, 1,670 ft. N of S line, 528 ft. E of W line, Blk. 3 in the W. M. Eastland Sur., 3½ miles NE from Red Rock | T. D. 1,940 ft.; drlg. in marly shale (old well reinstated). |
| Pacific Oil & Gas Co.'s No. 2 J. Spooner, 300 ft. from N line, 400 ft. from W line in the L. Lavenuz Sur., 4½ miles E from Cedar Creek | T. D. 300 ft.; drlg. in sand rock. |

**BEE COUNTY**

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|---|---|
| Nichols Oil Corp.'s No. 3 Hicks, 500 ft. N-S line, 500 ft. E-W line of Blk. 19, just S of Normanna, 350 ft. SE of No. 2 Hicks discovery | T. D. 3,628 ft.; sand 3,619-28 ft.; showed dry gas on drill stem test; estimated 20,000,000 ft. |
| Cosden Oil Co.'s No. 1 R. A. McKinney, 150 ft. from S and E lines of McKinney 350-ac. in N part of S. John Pace Sur., 1 mile W from Pettus | T. D. 3,050 ft.; drlg. in shale. |
| Rowan & Tong's No. 1 F. O. Massengale 350-ac., 150 ft. from S line, 3,184 ft. from W line of tract and survey, north John Pace Sur., 1½ miles W from Pettus Townsite | T. D. 3,733 ft.; drlg. in sandy shale. |
| Ed Price's No. 1 Mrs. Laura E. Weiss, 200 ft. out of NW cor. of B.&B. 640-ac. Sur., E of Normanna, 6 miles W of Blanco Creek, in the B.&B. Sur. | T. D. 1,580 ft.; drlg. in sandy shale. |
| Houston Oil Co.'s No. 1 J. F. Portis 288.3-ac., 1 mile SW of No. 1 McKinney, in the A. Smalley Sur. | T. D. 5,000 ft.; dry and abandoned. |
| Fisher & Wiggins' No. 1 A. J. Kimbell, C 189 acres in the Stephen Winship Sur. | T. D. 3,337 ft.; shut down. |

**BROOKS COUNTY**

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|---|---|
| Houston Oil Co. of Texas' No. 1 Wormser-Holbien, 1,550 ft. S, 2,650 ft. E of intersection of Lisandro Saenz & Manuel Saenz tracts, El Palo & Blanco de Maguellas grant, SW of Lasater discovery gas | Location. |
| Humble Oil & Ref. Co.-Shell Pet. Corp.'s No. 2 Wm. Singels, 1,320 ft. W of E line, 1,800 ft. S of N line of Sec. 312, Alta Verde area, 7 miles SE from Lasater gas field | T. D. 560 ft.; set 10-in. surface csg.; W.O.C. |

**BEXAR COUNTY**

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|---|---|
| Moore-Jauer's No. 1 Holly R. Ellison | T. D. 2,103 ft.; drlg. in sand and broken lime rock. |
| Dingman Drilling Co.'s No. 7 C. N. Cassin, 625 ft. from W line, 900 ft. from from S line of 10,000-ac. tract in the J. M. Urriegas Sur., 5 miles SE from San Antonio | Location. |

**CALDWELL COUNTY**

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|---|---|
| Herb. Morgan's No. 1 O. Perry, 2,600 ft. S line, 3,850 ft. W line of survey in the John D. Ranes Sur., 2 miles NE from Bruner Pool | T. D. 2,744 ft.; Edwards; waiting for csg. |
| Trinity Drillers' No. 1 McMullen, 2,125 ft. from NE line, 150 ft. from NW line of Sur., Gibson Betty Sur. | T. D. 3,441 ft.; dry and abandoned. |

(Continued on Page 156)

# California Maximum at 593,000 Bbls.

## Recommendation of General Committee Suggests Reduction of 13,000 Bbls. From Previous Allowable Production

By L. P. Stockman
*Staff Correspondent, California Fields*

LOS ANGELES, Calif., May 17.—California's crude oil curtailment plan has reached the critical stage and the outcome of the crisis confronting operators is still in doubt. The situation is extremely critical due to the failure of a small minority of operators to ratify curtailment plans for the next several months, despite the fact that the proposed allowable maximum production of the state was set at a considerably higher figure than was generally anticipated.

Instead of recommending the reduction of State production to 575,000 bbls. per day, the operators' general committee on curtailment has set the maximum allowable production at 596,000 bbls. This represents a reduction of 13,000 bbls. per day from the previous established allowable of 609,000 bbls. set some time ago. It has been quite evident for some time that State production would probably continue at a high rate for several months to come. In order to cope with this situation the general committee has deviated from the policy adopted in the past of setting a new allowable every three months by recommending that the present maximum allowable production of 596,000 bbls. per day be maintained until November 1, 1930, unless some unforeseen development changes the outlook.

### Must Cut 34,000 Bbls.

In adopting the new allowable of 596,000 bbls. per day, the general committee on crude oil curtailment made it plain that it meant 596,000 bbls. and not 597,000 bbls., or any other figure in excess of the new quota. State production has been hovering around 630,000 bbls. per day for the past several weeks, indicating that total production must be cut 34,000 bbls. per day in order to reach the new objective. Previous to the action of the general operators' committee on curtailment in setting the new maximum allowable at 596,000 bbls. per day for the next five and one-half months, the fact finding committee reported that the potential daily production of the State with everything wide open approximated 1,107,050 bbls. This slight upward revision in the total potential daily production of the State came somewhat as a surprise as many operators were of the opinion that the present potential should be considerably lower than the last estimate due to the rapid decline which has taken place in deep zones at Santa Fe Springs. The potential production of this field was substantially reduced but, on the other hand, the potentials for Long Beach, Elwood, Ventura Avenue and other fields were increased due to the completion of large wells during the interim.

### New Schedule

Under the new schedule adopted by the operators' general committee on curtailment, Group No. 1, comprising the flush fields, has a potential daily production of 659,100 bbls., while Group No. 2, which includes the settled fields, has a potential daily production of 379,950 bbls. Kettleman Hills, which was assigned a special class designated as Group No. 3, has a rated potential of 68,000 bbls. daily and a new allowable production of 14,144 bbls. Group No. 1, which consists of Santa Fe Springs, Long Beach, Ventura Avenue, Elwood, Seal Beach, Kern Front, Mount Poso, Round Mountain and Maricopa Flats, will be allowed to produce 354,267 bbls. per day during the period between now and November 1. This represents 53.75 per cent of the group's total potential daily production, aggregating 659,100 bbls. The allowable production of Group No. 2 for the forthcoming period is set at 227,592 bbls. per day, or 59.9 per cent of the group's potential production, which aggregates 379,950 bbls. per day. Unlike the fields in Group No. 1, where the cut for each field will be 46.25 per cent of the potential, the allowable daily production in fields in Group No. 2 vary. This lack of uniformity is due to the fact that several fields are already shut down 100 per cent, while in other cases it is impossible to make any further reduction due to lease requirements and other factors beyond control of the committee.

On the face of detailed figures covering present potential production, a superficial check would tend to reveal some apparent discrepancies, but a more minute survey will bring to light sufficient justification for the potentials established by the fact finding committee. Under the new schedule Santa Fe Springs is credited with a potential daily production of 196,000 bbls. with the new allowable production set at 105,350 bbls. per day. Some may doubt that this field is capable of reaching the maximum potential set up but it was the general consensus of the committee that the figure agreed upon, 196,000 bbls per day, represented a fair allotment. In order to support its compilation, the committee authorized a number of wells located at strategic points throughout the field to open up to full production for a short period. Production recorded during this restricted flow test was 2 per cent in excess of the potential previously assigned to the wells tested out, thus supporting the estimated potential assigned to the field. It is quite probable that the installation of compressors and the placing of wells on gas lifts during the next 30 or 60 days should stabilize production and prevent field production from sliding out from under the potential. It might be of interest to mention the fact that several wells recently put on compressors at Santa Fe Springs showed increases in production from 150 bbls. per day to better than 300 bbls. daily. It is quite obvious that any artificial stimulation applied or corrective work undertaken would be reflected in field production and have a tendency to prevent any substantial decline in potential production.

### Stabilization at Stake

Stabilization of the oil industry on the Pacific Coast depends primarily upon the ability of operators to reduce State production to the new allowable of 596,003 bbls. per day established by the operators' general committee on curtailment. If this objective is reached and rigidly adhered to, California refiners will be able to liquidate some of their excess stocks of crude and refined oils and be in a better position to meet any emergency in the future. If this projected general improvement materializes as a result of curtailment work, this improvement will be passed on to producers in the form of better prices for crude oil as preliminary estimates indicate that the maintenance of State production at 596,003 bbls. per day will probably result in a withdrawal of approximately 1,500,000 bbls. monthly. It must be remembered, however, that, while it may be premature to venture any conjecture as to when crude oil prices may be increased, it is bound to come sooner or later if operators effect stabilization and alleviate the burden which refiners have been bearing during the past several years. It might not be amiss to mention the fact while commenting on the possibility of an upward revision in crude oil prices that we may anticipate a substantial reduction in prices if producers fail to effect the necessary curtailment which forms the basis for any possible improvement in general conditions. It is logical to assume that if any disciplinary action becomes necessary because of the failure of any field to reach its new objective offending fields may be penalized by lower prices without disrupting crude oil price schedules effective in other areas.

The establishment of 596,003 bbls. per day as the maximum allowable production for the State, instead of 550,000 bbls. or 575,000 bbls. as was proposed by Santa Fe Springs operators, should result in more effective enforcement. Any attempt to reduce State production to 550,000 bbls. per day would be doomed at the outset for the simple reason that it could not be accomplished without endangering many flowing wells and the suspension of production activities in settled fields. It would be extremely difficult in the face of present conditions with more than 200,000 bbls. per day shut in at present to get State production down to even 575,000 bbls. per day for the same reasons. As has been stated, the success of the crude oil curtailment program depends upon the co-operation of each individual producer. There are still a number of holdouts at Long Beach and Santa Fe Springs who may jeopardize present attempts to effect stabilization through the regulation of production. Those who have signed the new curtailment agreement covering Santa Fe Springs have already started reducing their respective production to the new allowable set by the general committee, but it is a foregone conclusion that this group will not continue to hold the sack indefinitely if those holding out fail to follow a similar procedure.

### Santa Fe Springs

Daily production at Santa Fe Springs has shown a consistent decline during the past several days due to the fact that operators have begun pinching back their output in compliance with the curtailment agreement. The field has a long way to go, however, before reaching the new allowable of 105,350 bbls. per day as current production approximates 123,000 bbls. daily. The output of natural gas, in sympathy with the reduction effected in crude oil production, has also showed a consistent decline during the past week. Production of natural gas yesterday was 378,000,000 feet, as compared with a high for the week of 406,000,000 feet per day. Drilling operations at Santa Fe Springs have shown a very substantial decline during the past few months and a further drop may be anticipated due to the fact that the period of flush production is at an end except in a limited area somewhat removed from intensive town lot development. At the close of April there were only 34 completed drilling wells under way as compared with 54 at the close of March and 94 at the close of February.

The Union Oil Co. finished two more wells at Santa Fe Springs during the past week, making a total of five completed during the current month and eight since April 1. The new wells finished this week were Nos. 20 and 21 on the Alexander lease, the former being good for 330 bbls. per day from 7,932 feet and the latter, 640 bbls. daily from 7,926 feet. The company has three more wells rotating ahead in the oil sand and several others scheduled for early completion. The Standard recompleted No. 8 Jordan flowing 175 bbls. per day during the early part of the week and should have No. 23 Walker and No. 14 Santa Gertrudes on production shortly. The Superior Oil Co. also chalked up a recompletion when No. 5 Wardman was returned to production doing 210 bbls. of 31.4 gravity oil daily from the Clarke zone at 7,796 feet. E. G. Pulliam recompleted his No. 1 Wardman doing 286 bbls. of 31.2 gravity oil daily on a compressor at 7,182 feet. The Texas wound up the week by recompleting No. 4 Baldwin after redrilling and deepening it to the Clarke zone at 7,885 feet, from which depth it was returned to production doing 228 bbls. daily.

### Long Beach

The Long Beach Field, with a potential daily production of 166,200 bbls. per day and an allowable daily production of 89,333 bbls. under the new curtailment order, will be obliged to effect a reduction of 10,000 bbls. per day in order to reach the new objective. This will necessitate some very close figuring although it should be attained if 100 per cent co-operation is secured from producers. It is interesting to note in checking over the weekly development reports that new wells completed in the Long Beach Field during the past seven-day period showed larger initials than wells finished at Santa Fe Springs during the same period. The James Oil Co., for instance, finished No. 5 Signal, a new well flowing 680

**TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS**

| Commodity— | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
|---|---|---|---|---|---|---|
| Crude oil | ..... | ..... | ..... | ..... | 77,405 | 328,410 |
| Fuel oil | ..... | ..... | ..... | ..... | 71,950 | 49,950 |
| Diesel and gas oil | 5,675 | 811 | 64,725 | 9,246 | 1,542,044 | 800,124 |
| Gasoline | 226,645 | 32,378 | 482,800 | 68,971 | 6,168,268 | 7,215,944 |
| Naphtha distillate | ..... | ..... | ..... | ..... | ..... | 81,750 |
| Coastwise— | | | | | | |
| Crude oil | 384,141 | 54,877 | 412,019 | 58,860 | 5,834,194 | 9,267,995 |
| Fuel oil | 297,010 | 42,430 | 303,037 | 43,291 | 6,383,158 | 7,963,217 |
| Diesel and gas oil | 64,126 | 9,161 | 15,174 | 2,168 | 716,490 | 583,900 |
| Gasoline | 157,231 | 22,462 | 247,673 | 35,382 | 3,984,631 | 4,034,460 |
| Kerosene | 1,018 | 145 | ..... | ..... | 53,527 | 17,777 |
| Exports— | | | | | | |
| Crude oil | 178,652 | 25,522 | 34,025 | 4,861 | 2,385,231 | 1,804,328 |
| Fuel oil | 478,157 | 68,308 | 447,115 | 63,874 | 6,790,867 | 6,732,815 |
| Diesel and gas oil | 143,950 | 20,564 | 62,545 | 8,921 | 1,937,493 | 817,511 |
| Gasoline | 400,593 | 57,228 | 40,202 | 5,743 | 5,667,163 | 3,148,371 |
| Kerosene | ..... | ..... | 121,132 | 17,305 | 1,522,476 | 1,017,385 |
| Lubricants | ..... | ..... | ..... | ..... | 10,082 | ..... |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Diesel and gas oil | ..... | ..... | ..... | ..... | 88,280 | ..... |
| Gasoline | ..... | ..... | ..... | ..... | 440,188 | 935,547 |
| Lubricants | ..... | ..... | ..... | ..... | 2,946 | ..... |
| Coastwise— | | | | | | |
| Fuel oil | 84,112 | 12,016 | 200,433 | 28,633 | 1,482,805 | 911,689 |
| Diesel and gas oil | 9,941 | 1,420 | 20,135 | 2,876 | 134,403 | 234,220 |
| Gasoline | 70,932 | 10,133 | 110,829 | 15,833 | 1,488,068 | 1,384,903 |
| Kerosene | ..... | ..... | ..... | ..... | 106,349 | 39,647 |
| Exports— | | | | | | |
| Crude oil | ..... | ..... | ..... | ..... | 3,075 | 121,603 |
| Fuel oil | ..... | ..... | 94,115 | 13,445 | 441,559 | 241,671 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 124,540 | 124,838 |
| Gasoline | 14,720 | 2,103 | 87,000 | 12,429 | 1,390,212 | 2,210,399 |
| Kerosene | ..... | ..... | 79,000 | 11,286 | 241,499 | 199,428 |
| Lubricants | ..... | ..... | ..... | ..... | ..... | 17,688 |

bbls. of clean 31.1 gravity oil daily from 6,900 feet. while the largest completion chalked up at Santa Fe Springs was the Union's No. 21 Alexander, which made 640 bbls. per day. The Vesta Petroleum at Long Beach headed the completion list with an 832-bbl. flowing well resulting from the completion of No. 3 Signal in the deep sand at 7,090 feet.

T. J. (Tom) Cannon successfully recompleted No. 2 Hail Weber flowing 800 bbls. daily from 7,326 feet. but this project subsequently sanded up and is now being cleaned out. This well has plenty of kick and may do 1,000 bbls. per day after it cleans itself out. The Long Beach Field did not show any change during the past month as far as drilling operations are concerned, the number of strings of tools in operation being the same as at the close of March. It appears quite probable, however, that there will be a slight increase in drilling operations during May, as 25 new rigs have recently been erected for immediate use. Most of this projected development work is located in the western or Los Cerritos end of the field where substantial production has been consistently secured. New wells were spudded in during the past week by E. H. Coombs, Dabney & Johnston, J. J. Davis, Hammond & Standlee, Otis Hoyt, Mammoth Oil Co., Plymouth Petroleum and the Safeway Oil Co.

### Ventura Avenue

Two new wells were completed in the Ventura Avenue Field during the past week, one of which registered substantial production. This was No. 93 Lloyd of the Associated Oil Co. which came in under a natural flow doing 3,812 bbls. of clean 28.9 gravity oil and 3,184,000 feet of natural gas daily from 7,319 feet. The other well finished this week was No. 26 Edison of the Shell Oil Co. which tanked 330 bbls. of 29.1 gravity oil during the initial 24 hours following completion at 7,130 feet. No. 56 Taylor of the Shell also came in during the week but this project was killed because of water trouble. No. 56 Taylor made a bid for production in the shallow sand at 3,972 feet, with a 5¾-inch oil string landed at 3,691 feet. The failure to secure clean production, however, resulted in the pulling of the oil string and the hole subsequently plugged back to 3,845 feet. A check of development work under way in the Ventura Avenue Field indicates the probable completion of several new wells within the next few weeks. No. 91 Lloyd and No. 3-A McGonigle of the Associated and Nos. 48, 51, 52 and No. 2 Taylor Lloyd of the Associated are all rotating ahead in the oil sand at present.

The General Petroleum ran into a gray sand in No. 2 Ferguson, a tideland drilling project in the Rincon Field of Ventura County at 3,580 feet and the hole was accordingly plugged back to 3,451 feet preparatory to recompleting it in the zone from which it produced a few weeks ago. The Chanslor-Canfield Midway Oil Co.'s No. 2-A Hobson, located in the eastern end of the Rincon Field, cored a rather good looking oil sand at 6,934 feet, but the amount opened up is not sufficient to justify the expectation of developing commercial production. Additional drilling, however, may change the outlook as the hole has been showing gas in increasing quantity with each new foot of hole made. The Seacliff Development Co. has spudded in the first hole on tideland permit No. 56, located west of the General Petroleum's Ferguson permit.

Although the Elwood Field of Santa Barbara County is relatively free of competitive drilling, development work has been quite consistent since the lifting of the drilling curtailment agreement on February 1, with the result that several substantial producers have been completed subsequent to that time. A check of work under way at present indicates the probable completion of several additional potential producers within the next thirty days. The Barnsdall and Rio Grande, Elwood Exploration Co., Pacific Western and Bankline Oil Co. are all expected to finish one new well within the next thirty days. The Bolsa Chica Oil Co. is making good progress in its development work at Coal Oil Point, located a few miles east of the Elwood Field in Santa Barbara County. The Bolsa Chica's project is located out in the open ocean approximately 900 feet from the high tide line and consequently requires considerable preliminary preparation before spud can be made. Rig construction has just got under way and this well will probably be spudded in some time early in June.

### Midway-Sunset

The Doyle Petroleum Co.'s No. 8 Soucrail, located in the Maricopa Flats Section of the Midway-Sunset Field, has consistently increased since its completion some ten days ago, current production being 2,585 bbls. of clean 23.2 gravity oil. There were no new wells finished in this area during the week, although No. 5 Havenstrite of the Rio Grande has been on and off production at several intervals during the week. Producing wells in the Maricopa flats are bothered to a large extent with a sand trouble

(Continued on Page 163)

# SHOWS OF GAS OR OIL REPORTED IN SEVERAL MICHIGAN COUNTIES

By Special Correspondent

MUSKEGON, Mich., May 19.—Muskegon again led the State with only one small completion while there were no new completions in the central Michigan field at Mount Pleasant. A show of gas estimated to be good for about 1,000,000 feet a day was struck in the Marshall formation in the Vestaburg Oil & Gas Co.'s No. 1 Alfred Anna, SW NE SE, Section 27-12n-5w, Richard Township, Montcalm County, but it was soon drowned out by water. Gas was struck at 1,233 feet in a formation which is proving to be full of gas in every direction from the proven Mount Pleasant Field. Because of these many shows of Marshall gas operators are looking forward to better things in central Michigan.

Another upper Traverse producer in the Muskegon Field has been deepened into the Dundee with an initial production of about 20 bbls. It is the Grand Rapids Oil Co.'s No. 1 Smith, SW NW, Section 5-10-16, Muskegon Township, near the northeast edge of the field.

Permit was granted for Crest Oil Co.'s No. 1 Moch heirs, NE SE NE, Section 7-10-16w, Muskegon Township, on the shore of Bear Creek north of the tuberculosis sanatarium.

### Show at Montague

A show of oil was struck in the Berea formation a few days ago in the White River Oil Corp.'s No. 4 on the Quinlan lease, SE NW NW, Section 29-12n-17w, Montague Township. Oil was encountered at 1,275 feet and drilling has been suspended at about 1,325 feet.

No. 1 Schultz, NW NW, Section 12-15n-18w, Golden Township, Oceana County, near Silver Lake, drilled by Edward

(Continued on Page 161)

### IMPORTANT NORTHERN CALIFORNIA WILDCATS

| Company, well and location— | S.T.R. | Depth | Status |
|---|---|---|---|
| Standard, No. 1 Point Conception, Santa Barbara Co. | X- 5-34 | 4,600 | set pipe |
| Universal, Consd., No. 1 Pt. Conception, Santa Barbara Co. | 30- 5-34 | 2,419 | sd. sh. drilling |
| Ohio Oil Co., No. 1 Lompoc, Santa Barbara Co. | 2- 6-34 | 4,685 | abandoned |
| Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co. | 15- 7-35 | 2,703 | hd. sd. drilling |
| Vaqueros Oil Co., No. 1 Purisima, Santa Barbara Co. | 5- 7-33 | 1,077 | sd. sh. drilling |
| Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co. | 8- 9-33 | 3,416 | sd. sh. drilling |
| Barnsdall, No. 1 Gato Ridge, Santa Barbara Co. | 9- 8-32 | 1,266 | br. sh. drilling |
| Duell Pet. Co., No. 1 Santa Ynez, Santa Barbara Co. | 9- 7-30 | 1,418 | hd. sd. drilling |
| Carey, A., No. 1 Goleta, Santa Barbara Co. | 1- 4-28 | 2,880 | suspended |
| General Pet., No. 1 Goleta, Santa Barbara Co. | 21- 4-28 | 4,533 | shut in |
| General Pet., No. 2 Goleta, Santa Barbara Co. | 21- 4-28 | 4,350 | fishing |
| General Pet., No. 136 Goleta, Santa Barbara Co. | 21- 4-28 | 1,016 | suspended |
| General Pet., No. 137 Goleta, Santa Barbara Co. | 21- 4-28 | 1,026 | suspended |
| General Pet., No. 138 Goleta, Santa Barbara Co. | 21- 4-28 | 3,994 | sd. sh. drilling |
| General Pet., No. 139 Goleta, Santa Barbara Co. | 21- 4-28 | 1,035 | suspended |
| General Pet., No. 143 Goleta, Santa Barbara Co. | 21- 4-28 | 1,040 | suspended |
| Boles Oil Co., No. 140 Goleta, Santa Barbara Co. | 22- 4-28 | 50 | suspended |
| U. S. Pet., No. 141 Goleta, Santa Barbara Co. | 20- 4-28 | 1,035 | suspended |
| U. S. Pet., No. 142 Goleta, Santa Barbara Co. | 20- 4-28 | 1,032 | suspended |
| U. S. Pet., No. 143 Goleta, Santa Barbara Co. | 20- 4-28 | 1,019 | suspended |
| Macmillan Pet., No. 134 Goleta, Santa Barbara Co. | 21- 4-28 | 760 | sd. drilling |
| Bolsa Chica, No. 191 Goleta, Santa Barbara Co. | 24- 4-29 | mtl. | building rig |
| Caldwell Brown, No. 159 Goleta, Santa Barbara Co. | 24- 4-29 | 25 | suspended |
| El Camino Oil, No. 149 Goleta Tideland, Santa Barbara | 23- 4-28 | 40 | suspended |
| Frazer & Oliver, No. 173 Capitan, Santa Barbara Co. | 4- 4-30 | 101 | suspended |
| Indian Pet., No. 174 Capitan, Santa Barbara Co. | 4- 4-30 | 220 | rigging up |
| McLaine, W. L., No. 175 Capitan, Santa Barbara Co. | 4- 4-30 | 30 | suspended |
| Durkee, R. S. No. 176 Capitan, Santa Barbara Co. | 4- 4-30 | 30 | suspended |
| Cunningham, W., No. 177 Capitan, Santa Barbara Co. | 4- 4-30 | 30 | suspended |
| Oakburn Oil Co., No. 168 Capitan, Santa Barbara Co. | 4- 4-30 | 370 | suspended |
| Oakburn Oil Co., No. 169 Capitan, Santa Barbara Co. | 4- 4-30 | 200 | suspended |
| Oakburn Oil Co., No. 170 Capitan, Santa Barbara Co. | 4- 4-30 | 1,302 | shut in |
| Oakburn Oil Co., No. 171 Capitan, Santa Barbara Co. | 4- 4-30 | 300 | suspended |
| Oakburn Oil Co., No. 172 Capitan, Santa Barbara Co. | 4- 4-30 | 325 | suspended |
| Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co. | 20-10-35 | 4,505 | fishing |
| Pacific Western, No. 1 Gibraltar, Santa Barbara Co. | 14- 5-27 | 2,345 | suspended |
| Shell, No. 1 Summerland, Santa Barbara Co. | 18- 4-25 | 2,000 | br. sh. drilling |
| Standard, No. 1 Casitas, Santa Barbara Co. | 26- 4-25 | 2,499 | hd. sd. drilling |
| Continental, Tideland permit No. 121, Santa Barbara Co. | 33- 4-25 | 55 | rigging up |
| Continental, Tideland permit No. 122, Santa Barbara Co. | 33- 4-25 | 580 | sd. sh. drilling |
| Continental, Tideland permit No. 123, Santa Barbara Co. | 33- 4-25 | 213 | sd. drilling |
| Continental, Tideland permit No. 124, Santa Barbara Co. | 33- 4-25 | 4,500 | sd. sh. drilling |
| Continental, Tidcland permit No. 124-A, Santa Barbara Co. | 33- 4-25 | 418 | suspended |
| Continental, Tideland permit No. 125, Santa Barbara Co. | 33- 4-25 | 120 | rigging up |
| Continental, Tideland permit No. 126, Santa Barbara Co. | 33- 4-25 | 200 | rigging up |
| Continental, Tideland permit No. 127, Santa Barbara Co. | 33- 4-25 | 196 | sd. drilling |
| Continental, Tideland permit No. 128, Santa Barbara Co. | 33- 4-25 | 163 | sd. drilling |
| Continental, Tideland permit No. 129, Santa Barbara Co. | 33- 4-25 | 100 | sd. drilling |
| Exeter Oil, Tideland permit No. 163, Santa Barbara Co. | 32- 4-25 | 76 | suspended |
| Getty, George F., No. 120 Carpinteria, Santa Barbara Co. | 32- 4-25 | 1,030 | sd. sh. drilling |
| Getty, George F., No. 130 Carpinteria, Santa Barbara Co. | 32- 4-25 | 55 | to deepen |
| Shell, No. 5 Oxnard, Ventura Co. | 14- 2-20 | 116 | deep test |
| Standard, No. 5-9 Saticoy, Ventura Co. | 10- 2-22 | 8,529 | redrilling |
| Prairie Oil & Gas, No. 1 Ventura, Ventura Co. | 30- 3-22 | 4,457 | redrilling |
| Bolsa Chica, No. 1-A Temescal, Ventura Co. | 4- 4-18 | 2,260 | good gas show |
| Fennell, E. A., No. 1 Lankershim, Ventura Co. | 13- 4-19 | 1,660 | suspended |
| General Pet., No. 1 Fillmore, Ventura Co. | 6- 3-19 | 1,638 | sd. sh. drilling |
| Associated, No. 1 Rincon Creek, Ventura Co. | 19- 4-24 | 1,376 | hd. sd. drilling |
| Calleguas Synd., No. 1 Camarillo, Ventura Co. | 6- 1-20 | 855 | suspended |
| Camarillo Synd., No. 1 Camarillo, Ventura Co. | 33- 2-20 | 314 | basalt |
| Pure Oil Co., No. 1 S. P. Canyon, Ventura Co. | 15- 4-21 | mtl. | building rig |
| Milham Expltn., No. 9 Buttonwillow, Kern Co. | 8-28-23 | 4,990 | fishing |
| General Pet., No. 1 Buttonwillow, Kern Co. | 6-28-23 | 2,706 | will deepen |
| Shell, No. 1 Lerdo, Kern Co. | 23-28-26 | 1,630 | sd. sh. drilling |
| Nordon Exp. Co., No. 1 Buttonwillow, Kern Co. | 7-29-24 | 135 | suspended |
| Shell, No. 1 Weed Patch, Kern Co. | 28-30-29 | 4,133 | gr. sd. drilling |
| Shell, No. 1 Edison, Kern Co. | 33-29-29 | 4,350 | hd. sd. drilling |
| Symark Oil Co., No. 1 Edison, Kern Co. | 24-29-29 | 2,130 | suspended |
| Sayre, F. M., No. 1 Edison, Kern Co. | 5-30-29 | 4,320 | cleaning out |
| Helen Pet., No. 1 Jasmine, Kern Co. | 23-25-27 | 2,220 | suspended |
| Shell, No. 1 Semitropic, Kern Co. | 17-27-23 | 1,042 | sd. sh. drilling |
| Moran & DeCamp, No. 1 Mojave, Kern Co. | 26-10-14 | 500 | hd. sd. drilling |
| Bardeen, H. A., No. 1 San Emidio, Kern Co. | 18-10-23 | 960 | cleaning out |
| Bardeen, H. A., No. 2 San Emidio, Kern Co. | 10-10-23 | 1,840 | sd. sh. drilling |
| Richfield, No. 1 Kreyenhagen, Fresno Co. | 33-22-16 | 111 | sd. drilling |
| Currency Pet. Co., No. 1 Jacalitos, Fresno Co. | 28-21-14 | 3,680 | cleaning out |
| Knudsen, John, No. 1 Jacalitos, Fresno Co. | 14-21-14 | 1,770 | gr. sd. drilling |
| Petroleum Securities, No. 2 Huron, Fresno Co. | 28-20-16 | 7,390 | suspended |
| Fresno Madera Oil Co., No. 1 Clovis, Fresno Co. | 18-12-21 | 4,370 | sd. sh. drilling |
| Rio Grande, No. 1 Kerman, Fresno Co. | 35-13-16 | 4,840 | sd. sh. drilling |
| Western Gulf, No. 1 Penoche Valley, Fresno Co. | 26-15-12 | 4,930 | sd. sh. drilling |
| Panorama Oil Co., well No. 1, San Luis Obispo Co. | 7-31-21 | 4,019 | fishing |
| Libby Pet., No. 1 Shandon, San Luis Obispo Co. | 31-27-15 | 4,483 | hd. sd. drilling |
| Paso Robles Synd., No. 1 Creston, San Luis Obispo Co. | 27-27-11 | 3,930 | hd. sd. drilling |
| Union, No. 1 King City, Monterey Co. | 8-22- 8 | 3,250 | suspended |
| Standard, No. 1 King City, Monterey Co. | 23-22- 7 | 4,340 | fishing |
| Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co. | 19-23-15 | 181 | suspended |
| O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co. | 7-23-20 | 4,310 | cemented |
| Penn Western, No. 1 Tulare Lake, Kings Co. | 24-21-18 | 1,338 | suspended |
| Wellport Oil Co., No. 1 Devils Den, Kings Co. | 9-24-17 | 3,664 | fishing |
| Twin State Oil Co., No. 1 Point Arena, Mendocino Co. | 14-12-17 | 3,360 | hd. sd. drilling |
| Barnhart Trust, No. 1 Oakdale, San Joaquin Co. | 3- 2-10 | 3,340 | sd. sh. drilling |
| Orinda Pet., well No. 1, Contra Costa Co. | 32- 1- 3 | 570 | sd. drilling |
| White, Roy, No. 1 Pixley, Tulare Co. | 8-23-26 | 4,020 | suspended |
| Terra Bella Oil Co., No. 1 Porterville, Tulare Co. | 35-22-27 | 900 | suspended |
| Colusa Oil Co., No. 1 Bush, Colusa Co. | 31-15- 4 | 640 | sd. drilling |

### IMPORTANT SOUTHERN CALIFORNIA WILDCATS

| | | | |
|---|---|---|---|
| Simmel, L. G., No. 1 Inglewood, Los Angeles Co. | 21- 2-14 | 5,380 | suspended |
| Raleigh Oil Co., No. 1 Malibu, Los Angeles Co. | 1- 2-19 | 3,880 | suspended |
| Union, No. 1 Orchard Dale, Los Angeles Co. | 10- 3-11 | rig | rigging up |
| Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co. | 21- 3-12 | 5,150 | cleaning out |
| Burlingham Pet., No. 1 Compton, Los Angeles Co. | 17- 3-13 | 3,380 | sd. sh. drilling |
| Diller, W., No. 1 Watts, Los Angeles Co. | 8- 3-17 | 6,160 | gr. sd. drilling |
| Crimson Pet., No. 1 Compton, Los Angeles Co. | 22- 3-13 | 130 | suspended |
| Ohio, No. 1 Moneta, Los Angeles Co. | 35- 3-14 | 4,684 | sd. sh. drilling |
| Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co. | 30- 3-14 | 6,525 | suspended |
| McMahon & McDonald, No. 1 Watts, Los Angeles Co. | 12- 3-14 | .... | location |
| Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co. | 31- 3-14 | rig | suspended |
| Rio Grande, No. 1 Watson, Los Angeles Co. | 17- 4-13 | 5,630 | gr. sd. drilling |
| Shell, No. 1 Van Nuys, Los Angeles Co. | 19- 2-15 | 2,620 | sd. sh. drilling |
| Anchor Oil Co., No. 1 Puente, Los Angeles Co. | 19- 2-10 | 4,820 | suspended |
| Rucker, R. C., No. 1 Puente, Los Angeles Co. | 27- 2-10 | 3,660 | suspended |
| Sherman, J. W., No. 1 Puente, Los Angeles Co. | 33- 2- 8 | 850 | suspended |
| Keck & Hall, No. 1 Puente, Los Angeles Co. | 32- 2- 8 | 1,120 | gas well |
| Marcel Pet. Co., No. 1 Puente, Los Angeles Co. | 31- 2- 8 | 1,880 | hd. sd. drilling |
| Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co. | 16- 1-11 | 1,950 | suspended |
| Olympic Corp., No. 1 Calabasas, Los Angeles Co. | 18- 1-17 | 4,299 | sd. sh. drilling |
| Martin, J. W., No. 1 Newhall, Los Angeles Co. | 22- 1-17 | 1,290 | suspended |
| Consolidated Oil Co., No. 1 Newhall, Los Angeles Co. | 8- 3-16 | 1,690 | sd. sh. drilling |
| National Sec., No. 1 Newhall, Los Angeles Co. | 1- 3-16 | 874 | suspended |
| Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co. | 1- 3-16 | 1,100 | sd. sh. drilling |
| Pioneer Pet., No. 1 Newhall, Los Angeles Co. | 14- 3-16 | 2,838 | suspended |
| Union, No. 1 Coyote, Sansinena, Los Angeles Co. | 30- 2-10 | 3,300 | br. sh. drilling |
| Tureco Oil Co., No. 1 Whittier, Los Angeles Co. | 29- 2-11 | 1,292 | sd. sh. drilling |
| Beard, G. F., No. 1 Brea Canyon, Los Angeles Co. | 30- 2- 9 | 1,099 | suspended |
| Western Gulf, No. 1 Brea Canyon, Los Angeles Co. | 28- 2- 9 | 4,360 | br. sh. drilling |
| Vaqueros Major, No. 1 Huntington Tideland, Orange Co. | 32- 5-11 | .... | location |
| Standard, No. 1 Bastanchury, Coyote, Orange Co. | 21- 3-10 | 5,500 | sd. sh. drilling |
| Graham & Loftus, No. 1 Coyote, Orange Co. | 18- 3- 9 | 3,280 | hd. sd. drilling |
| Union Oil Co., No. 1 Richfield, Orange Co. | 13- 3- 9 | 4,410 | hd. sd. drilling |
| Simmel, L. G., No. 1 Yorba Linda, Orange Co. | 21- 3- 9 | 813 | sd. drilling |
| Mesa Pet., No. 1 Newport, Orange Co. | 21- 6-10 | 4,910 | suspended |
| Hall, H. L., No. 1 Newport, Orange Co. | 20- 6-10 | 700 | set pipe |
| Standard, No. 1 Newport, Orange Co. | 26- 6-10 | mtl. | building rig |
| Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co. | 23- 7- 3 | 701 | cleaning out |
| Hemet Pet. Co., No. 1 Ward, Riverside Co. | 9- 5- 1 | 3,560 | suspended |
| Imperial Valley Oil Co., well No. 1, Imperial Co. | 32-11-10 | 2,980 | suspended |
| San Marcos Oil Co., well No. 1, San Diego Co. | 9-12- 3 | rig | suspended |
| Turner, S. S., No. 1 Escondido, San Diego Co. | 25-12- 2 | 2,170 | suspended |
| McGregor Synd., No. 1 Del Mar, San Diego Co. | 17-14- 3 | 1,260 | sd. sh. drilling |
| Borderland Oil Co., No. 1 Encinitas, San Diego Co. | 12-13- 4 | 2,414 | hd. sd. drilling |
| Borderland Oil Co., No. 1 Point Loma, San Diego Co. | 30-16- 3 | 2,400 | gr. sd. drilling |
| Grey, H. H., No. 1 Redlands, San Bernardino Co. | 25- 1- 2 | 2,525 | fishing |
| Duncan, N. I., No. 1 Mohave, San Bernardino Co. | 8- 4- 6 | rig | suspended |
| Girard & Grimes, No. 1 Corona, San Bernardino Co. | 8- 2- 8 | 1,549 | br. sh. drilling |

# Deep Gasser in Panola County, Texas

## Well a Mystery, but Is Reported as High as 20,000,000 Feet With Rich Gasoline Content. Quiet in Old Fields

By D. H. Bancroft
*Staff Correspondent, Louisiana-Arkansas*

SHREVEPORT, La., May 19.—R. O. Roy's sale of his Holly properties to the Standard Oil Co. of Louisiana and the completion of a good gasser at a new deep level in the Panola County, Texas, gas field attracted the most interest in the past week and were the only developments relieving the routine. So far as details go both are surrounded by more or less mystery which of course does not lessen the interest The contract of sale of Roy's property in the Holly district of DeSoto Parish was signed Wednesday but what the price and terms were is not definitely known. The trade was consummated by the Standard with the Acme Land & Investment Co., and whatever the full price may have been the controlling interest is said to have received $500,000 and an overriding one-twenty-fourth royalty as its share.

The property consists of approximately 5,600 acres in Townships 13 and 14, Ranges 13 and 14, the discovery well, No. 1-E Farmer in Section 5-13-13 and 12 rigs and drilling operations. One of these, No. 1-B Parker, Section 31-14-13, had lime and sand at 2,830-50 feet and tested 4,000,000 to 5,000,000 feet of gas. Coming out with testing tools the well threatened to blow in and was mudded off to set 6⅝-inch casing at 2,720 feet. Elevations equalized, the well checked about 25 feet lower than the producer. Wells transferred with the acreage are No. 1 Brooks, Section 8-13-13, derrick; No. 1-B Farmer, Section 8-13-13, drilling 1,500 feet; No. 1 C. C. Fuller, Section 5-13-13, drilling; No. 2 J. Fuller, Section 6-13-13, drilling; No. 1 Odes Fuller, Section 6-13-13, drilling; No. 1 Lee, Section 33-14-13, 6⅝-inch cemented 2,735 feet; No. 1 McGee, Section 8-13-13, derrick; the Parker well referred to and No. 1-A Parker, Section 5-13-13, drilling; No. 1 H. B. Sample, Section 7-13-13, derrick; No. 2 Tracy, Section 5-13-13, drilling and No. 1 I. Whitaker, Section 5-13-13, 6⅝-inch cemented at 2,729 feet. In addition to these Roy still has No. 1-D Farmer, Section 32-14-13, derrick; No. 1 Fuller, Section 6-13-13, drilling, and No. 1 Nelson, Section 36-15-13, rig up.

### East Texas Mystery

The Panola County, Texas, gasser was Natural Gas Products Co.'s No. 8 Roquemore in the B. C. Jordan Survey, an old well deepened from 2,785 feet, and information on it has been hard to get from the beginning. Consequently the total depth given, 4,645 feet, is an approximation at best. Not even the cementing crew knows where the last string of pipe was set as the steel line was not handled by either of them during the setting. Estimates on the production range from 8,000,000 to 20,000,000 feet of gas at around 1,900 pounds pressure though how an estimate of the pressure could be obtained without a more definite knowledge of the volume is not quite clear.

Only one other well in the Bethany-Waskom areas of the border territory—one drilled in the Waskom Field by Gulf Refining Co. several years ago—has gone so deep and it was dry at around the same depth or perhaps 4,500 feet. The next deepest producer was Magnolia Petroleum Co.'s No. 5 Tiller in the Jane Thorpe Survey, completed December 30 last year, gauging 15,000,000 feet of gas from a total depth of 3,186 feet. At that time this well was the deepest producer in the area and was finished in the equivalent of the Forth Worth lime. The Natural Gas Products Co.'s well is producing, presumably, from the Glen Rose member of the Trinity group, the same formation from which the seepage gas and oil in Pine Island and the 4,800-foot production in Cotton Valley. The gas differs from Cotton Valley deep gas in that it is apparently much richer in gasoline content. So far as could be learned no analysis to determine this content has been made, but some observers have said that it will run as high as 2,500 gallons to the million feet. What foundation there is for these estimates is not clear. However, rumors that it sprayed a little oil with the gas might be indicative of unusual richness, a condition that might have caused sufficient condensation of gasoline to prompt the oil rumors. The well will unquestionably encourage deeper drilling throughout that territory.

The original 2,900-foot gas horizon of Carterville, Louisiana, yielded its second oil producer of the recent development when Magnolia Petroleum Co. completed No. 1 Roberson in the SW NE Section 26-23-12, Bossier Parish, flowing 50 bbls. the first eight hours from 2,900 feet. It was drilled to 3,331 feet but missed the deep pay and plugged back to the shallow pay from which, after a shot, fluid rose 1,600 feet. Location is a quarter mile southeast of Bahan & Bahan and Air Lift Oil Co.'s No. 1 Mays, which made 95 bbls. of oil and 400 bbls. of salt water from 2,964 feet on completion a month ago, and the same distance south of Palmer Corp.'s No. 1 Roberson, which made 30 bbls. initial from the deep pay, these three wells marking the far northwest extremity of the present activity. In the opposite, or southeastern, tip of the field, Tippett Drilling Co.'s No. 2 Holmes, Section 36-23-12, same in flowing 400 bbls. of oil from 6 feet of sand, total depth 3,170 feet.

C. H. French is arranging to test No. 2 Biedenharn in Section 23-21-14 at around 1,040 feet, the same depth at which Nell & Lanier abandoned No. 1 on the same lease, which pumped a few barrels of oil before they abandoned it. Walker and others' No. 1 Antrim in Section 28-23-13, near Plain Dealing, which has been carried on the report since June, 1927, during most of which time it has been shut down, is preparing to resume operations at 3,184 feet, where it shut down for orders after bailing dry following an oil show. North and northeast of Plain Dealing, R. C. Williams has 2,500 acres of a block he is building scattered around Section 1-22-13, a drilling clause being the consideration. Gulf Refining Co.'s No. 26-A Levee Board, Section 34-21-16, Caddo Parish, pumped 63 bbls., total depth 1,836 feet, and Arkansas Fuel Oil Co. abandoned No. 5-F Urania, Section 24-10-1e, La Salle Parish, dry at 6,432 feet, the deepest hole yet drilled in northeastern Louisiana. It was dry all the way down except for a small gas show at 4,740-65 feet and salt water at 3,364 and 5,923-35 feet.

Daily average runs from the field totaling 98,680 bbls., showed a decline of 300 bbls. of which 240 bbls. was from the Arkansas pools. Louisiana pools ran 41,070 bbls. and Arkansas 57,610 bbls. Runs from the several pools were:

| | |
|---|---|
| **North Louisiana** | |
| Caddo, light | 9,660 |
| Caddo, heavy | 2,910 |
| Homer | 3,590 |
| Haynesville | 4,580 |
| DeSoto-Red River | 3,100 |
| Elm Grove | 415 |
| Bellevue | 650 |
| Cotton Valley | 2,210 |
| Urania | 5,420 |
| Pleasant Hill | 665 |
| Sarepta-Carterville | 3,315 |
| Zwolle | 3,820 |
| Holly | 745 |
| Total | 41,070 |
| Last week | 41,130 |
| Decrease | 60 |
| **Arkansas** | |
| El Dorado | 4,070 |
| Smackover, light | 5,300 |
| Smackover, heavy | 40,240 |
| Stephens | 950 |
| Nevada County | 960 |
| Lisbon | 1,000 |
| Champagnolle | 3,890 |
| Bradley | 80 |
| Mt. Holly | 120 |
| Urbana | 1,000 |
| Total | 57,610 |
| Last week | 57,850 |
| Decrease | 240 |
| Both states | 98,680 |
| Last week | 98,980 |
| Decrease | 300 |

### Activity in Richland

Considerable activity is forecast for the Richland Parish gas field where Southern Carbon Co. made locations for 11 new wells which may or may not start a line fight, as each of the eleven operations offsets a Louisiana Gas & Fuel Co. lease. The one completion in Richland during the week was Palmer Corp.'s No. 1 Louise Rhymes, Section 32-17-6, which gauged 51,192,000 feet of gas at 950 pounds pressure, total depth 2,450 feet. In the Monroe Field, Louisiana Gas & Fuel Co. completed No. 27 Crossett, Section 45-21-5, Morehouse Parish, gauging 37,011,000 feet at 1,020 pounds pressure, total depth 2,384 feet, the so-called Second sand. United Carbon Co.'s No. 5 Spade, Section 34-19-4, Ouachita Parish, gauged 5,184,000 feet at 830 pounds pressure, total depth 2,225 feet. Bahan & Bahan abandoned No. 1 J. West, Section 33-23-3, Union Parish, a wildcat northwest of production, as a dry hole at

(Continued on Page 162)

## WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

**NORTH LOUISIANA**
**AVOYELLES PARISH**

| Company, farm and location— | Remarks— |
|---|---|
| R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e. | Drlg. sand and shale 2,260 ft. |
| **BIENVILLE PARISH** | |
| W. A. Nichols et al's No. 1 McDermontt, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6 | Tested dry 2,050 ft.; S.D. 2,130 ft. |
| **BOSSIER PARISH** | |
| Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W. C. Sec. 15-22-14 | S.D. 765 ft. |
| Reid Clark et al's No. 1 Bollinger, SE cor. NW NW, Sec. 21-22-11 | Began drlg. May 5; cmtd. 10-in; drlg. 1,760 ft. |
| C. H. French's No. 1 Biedenharn, Sec. 23-21-14 | Arranging to test 1,040 ft. |
| La. G. & F. Co.'s No. 1 Crystal Oil Ref. Co., 66 ft. N, 1,320 ft. W, SE cor. SW SE, Sec. 7-21-11 | Drlg. shale 1,914 ft. |
| H. I. Morgan's No. 4 Wetherbee, 125 ft. W, 200 ft. S, NE cor. SW SE, Sec. 21-19-11 | Reaming to bottom 2,034 ft. |
| Walker et al's No. 1 Antrim, NW cor. SE, Sec. 28-23-13 | Arranging to resume operations. |
| **CADDO PARISH** | |
| Magnolia Pet. Co.'s No. 1 Swann, 330 ft. N, 380 ft. W, SE cor. NE SW, Sec. 16-21-14 | Show gas 1,754 ft.; drlg. sandy shale 1,763 ft. |
| L. B. Mawk's No. 1 Swann, 440 ft. N, 200 ft. E, SW cor., Sec. 23-21-14 | S.D. for fuel; T.D. 700 ft. |
| R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 33-23-16 | Drlg. lime 4,727 ft. |
| I. N. Pharis, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14 | S.D. 3,322 ft; topped sand at 3,396 ft; set 6⅝-in; T.D. 3,409 ft. |
| C. W. Robinson's No. 1 Wilson, 990 ft. S, 330 ft. W, NE cor. SE, Sec. 2-15-16 | Fishing 3 fourbles D.S.; T.D. 3,100 ft. |
| Triangle Drlg. Co.'s No. 1 Hardy et al, 660 ft. N, 660 ft. W, SE cor. fractional Sec. 18-19-16 | Standing; full string of 6-in. to kill S.W. flow; T.D. 2,300 ft. |

(Continued on Page 153)

## LOUISIANA-ARKANSAS PROVEN AREAS

**NORTH LOUISIANA**
**BOSSIER PARISH—CARTERVILLE**

| Company, farm and location— | Remarks— |
|---|---|
| Ark. Fuel Oil Co.'s No. 2-A Barnett, 330 ft. N, 330 ft. W, SE cor. W½ SE SE, Sec. 25-23-12 | Drlg. hard sand 2,765 ft. |
| Ark. Fuel Oil Co.'s No. 2-B Barnett, 330 ft. N, 330 ft. W, SE cor. NW NE, Sec. 26-23-12 | Drlg. chalk 2,398 ft. |
| Ark. Fuel Oil Co.'s No. 3-A Kilgore, 330 ft. S, 235 ft. E, NW cor. SE SW, Sec. 30-23-11 | Swabbing; T.D. 3,135 ft. |
| Ark. Fuel Oil Co.'s No. 4-A Kilgore, 100 ft. N, 1,330 ft. E, SW cor. SE SW, Sec. 30-23-11 | 190 ft. oil; W.O.S.R.; T.D. 3,131 ft. |
| Ark. Fuel Oil Co.'s No. 4-B Kilgore, 200 ft. N, 300 ft. E, SW cor. NE NW, Sec. 31-23-11 | W.O.S.R. 3,175 ft. |
| Ark. Fuel Oil Co.'s No. 6-B Kilgore, 330 ft. S, 330 ft. E, NW cor. NE NW, Sec. 31-23-11 | Cmtd. 6⅝-in. 3,140 ft.; T.D. 3,161 ft. |
| Ark. Fuel Oil Co.'s No. 7-B Kilgore, 330 ft. S, 990 ft. E, NW cor. NE NW, Sec. 31-23-11 | Cmtd. 6⅝-in. 3,145 ft.; T.D. 3,164 ft. |
| Ark. Fuel Oil Co.'s No. 8-B Kilgore, 330 ft. N, 1,520 ft. E, SW cor. NE NW, Sec. 31-23-11 | Began drlg. May 9; cmtd. 10-in 233 ft.; drlg. 765 ft. |
| Ark. Fuel Oil Co.'s No. 9-B Kilgore, 330 ft. S, 1,650 ft. E, NW cor. NE NW, Sec. 31-23-11 | Location. |
| Ark. Fuel Oil Co.'s (formerly Muslow Oil Co.'s) No 1 Mark Myer, 1,980 ft. N, 330 ft. W, SE cor., Sec. 36-23-12 | Coring 3,119 ft. |
| Ark. Fuel Oil Co.'s (formerly Muslow Oil Co.'s) No. 3 Peyton, Sec. 36-23-11 | T.A. 3,285 ft. |
| Ark. Fuel Oil Co.'s (formerly Muslow Oil Co.'s) No. 1 Floyd, 990 ft. S, 330 ft. W, C. Sec. 25-23-13 | W.O.S.R. 3,176 ft. |
| Ark. Fuel Oil Co.'s No. 1 Ramsey, 557 ft. S, 330 ft. E, C, Sec. 31-23-11 | Bailing to test; T.D. 3,171 ft. |

(Continued on Page 154)

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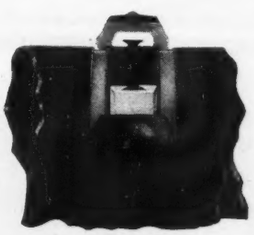

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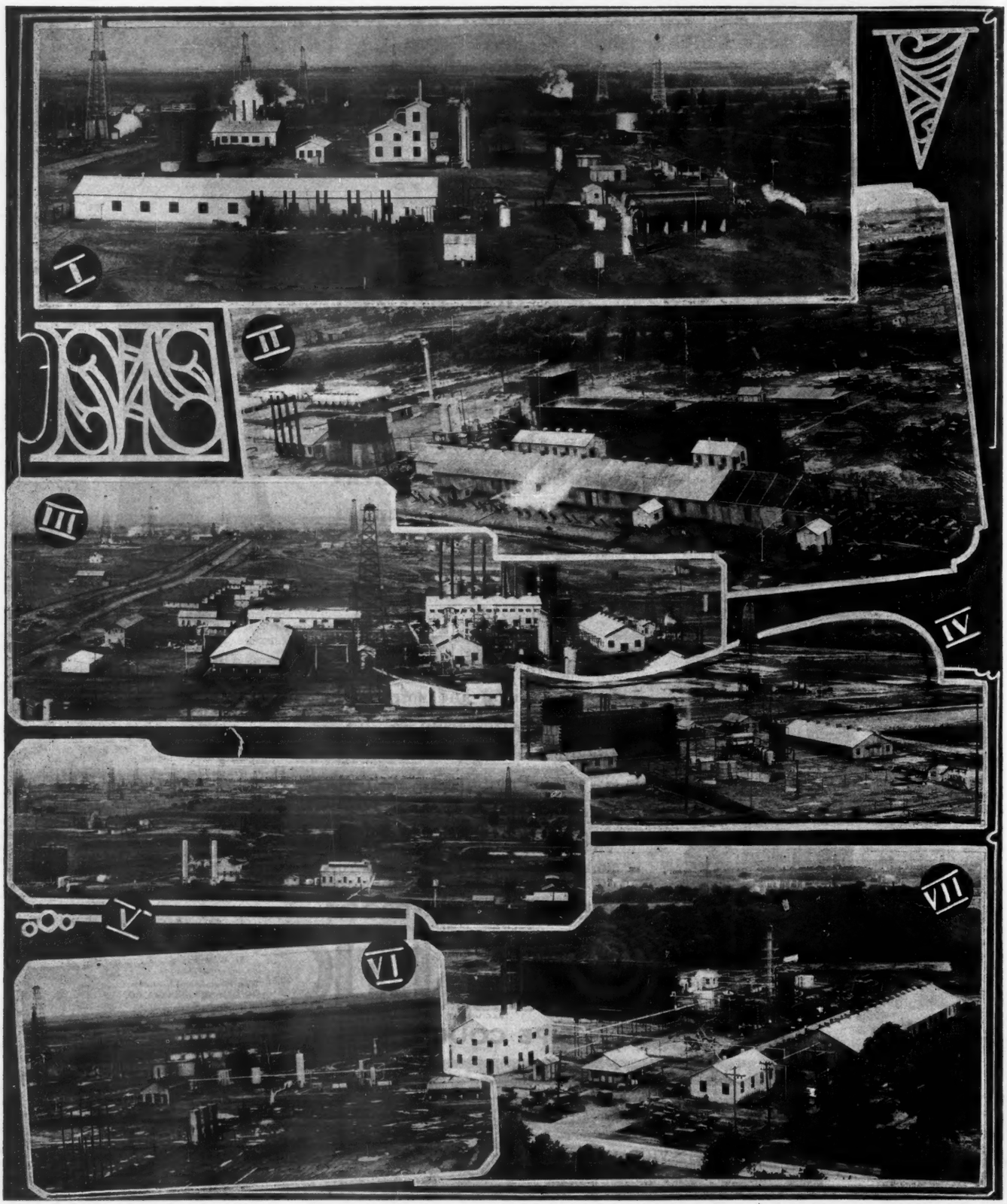


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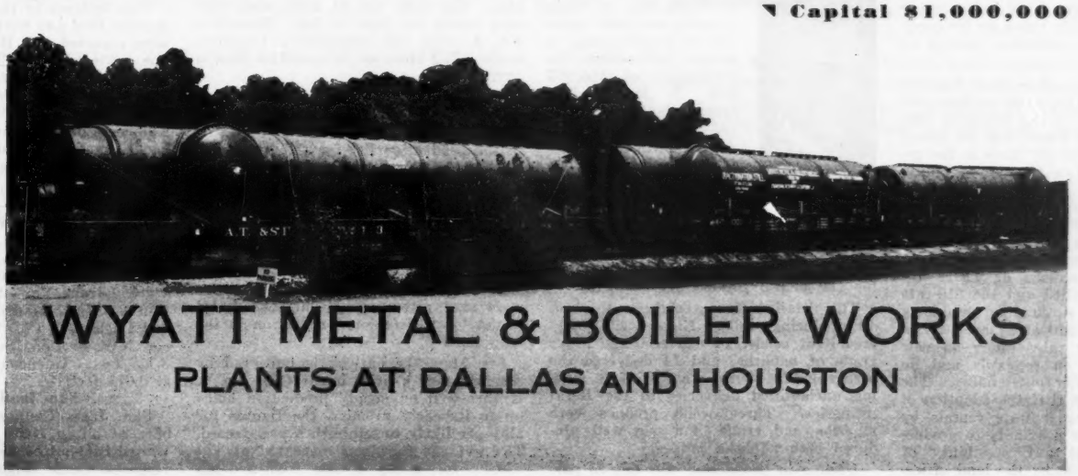

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# Big Drilling Campaign Begun at Hobbs

## State Land Commissioner Announces Increase in Minimum Rentals. Two Eddy County Failures. Gas Drilling Program

By Tolbert R. Ingram
*Staff Correspondent, Rocky Mountain Area*

DENVER, Colo., May 19.—The Texas & New Mexico Railroad, which was recently completed into Hobbs, N. Mex., is being taxed to capacity to move in rigs and equipment for the drilling campagin now under way. The Humble Oil & Refining Co. has made two new locations in the Hobbs area, bringing the number of its drilling wells up to six. The New Mexico State Land Commissioner has established a new schedule for rentals on state leases putting the minimum rentals at 25 cents to $10 per acre, depending on location. Two failures west of the Pecos River in Eddy County were reported in F. B. Van Horn's No. 1 Santa Fe and R. D. Compton's No. 1 State.

There were no completions in Colorado and one new location was announced, this being in South Park, in Park County, 9,000 feet above sea level.

A deal in Salt Creek acreage which consolidates some shale territory under one management was reported. The Salt Creek deep test has reached the top of the Madison lime and will be drilled into that formation as soon as casing is set and cemented. The Mountain Fuel Supply Co.'s program for developing gas reserves for Utah and Idaho calls for 80 wells in the next 10 years.

### NEW MEXICO

#### Hobbs Area—Lea County

The big drilling campaign which has been inaugurated in the Hobbs Pool in Lea County has resulted in the town of Hobbs becoming crowded to capacity and some difficulty has been encountered in caring for the people. The Texas & New Mexico Railroad, which recently was completed into the town from the south has about all the business it can handle in moving in drilling equipment and supplies. The principal difficulty is in building sidetracks and spurs sufficiently fast to keep up with the demand and some companies are moving in rig timbers by trucks rather than delay operations until the situation is cleared up. People looking for jobs might find it to their advantage to learn the facts before going in as there are usually two men for every opening under the conditions existing at Hobbs.

Austin D. Criles, state land commissioner, announced this week at Santa Fe that effective May 15 the minimum rentals on State land leases will be raised from 50 cents to $10 per acre in the restricted areas of Lea County, including the Hobbs district. The new minimum rates for State leases range from 25 cents to $10 per acre. The 25-cent rate, however, represents a revision downward from the peak rentals in areas where there is no good geology or where dry holes have been drilled and the $10-rate applies for areas surounding producing wells. All of the $10 areas are in Lea County. The new rates apply on new leases granted or on renewals and do not affect leases now outstanding. The commissioner states that the adoption of the policy of fixing definite rentals by areas based on their proximity to production was to avoid any possibility of charges of favoritism by the land office. In other words, the rates are marked on maps in the land office and are to apply to all comers alike. They are subject to revision at a later date should this be made advisable by the bringing in of production in areas at present inactive.

Two new locations were made by the Humble Oil & Refining Co., No. 6 Bowers, 2,310 feet from the south line and 330 feet from the east line, Section 30-18-38, and No. 7 Bowers, 2,310 feet from the north line and 330 feet from the west line, Section 29-18-38. No. 6 is in the same 40 as its No. 1 Bowers, the big producer, and No. 7 is an offset on the east to W. C. McBride, Inc.'s No. 1 McKinley. While some of the new wells are being delayed in spudding, awaiting the arival of supplies, most of them are getting under way. Drilling wells include the following:

#### Drilling Wells

Cecil Bordages' No. 1 Hughes, C S half, Section 27-19-38, considerably to the south of production, standing at 4,012 feet for some time with water and a little oil flowing over the top, is rigging up cable tools after contractor's tools were moved off location. The Midwest Refining Co.'s No. 8 State, C NW NW, Section 4-19-38, is digging cellar, and its No. 33 Byers, SE SW NE, Section 4-19-38, is drilling at 1,520 feet in anhydrite. The anhydrite was topped at 1,510 feet. The same company's No. 13 State, SE NE NW, Section 15-19-38, is drilling at 1,585 feet in red rock, and its No. 1 State, NE cor. NW, Section 15-19-38, cemented the 15½-inch at 117 feet in sand. It commenced spudding May 2. The Prairie Oil & Gas Co.'s No. 1 Crump, NW cor. NE, Section 15-19-38, is drilling in salt at 2,290 feet. It topped the salt at 1,690 feet and the elevation is 3,597 feet. The same company's No. 2 Crump, SW NW NE, Section 15-19-38, is drilling in salt at 2,205 feet. Top of salt was at 1,690 feet and elevation is 3,592 feet. The Prairie's No. 1 Selman, NW SW NE, Section 15-19-38, is drilling in salt at 2,100 feet. It topped the salt at 1,704 feet and elevation is 3,602 feet. Midwest's No. 36 State, SE cor. SW, Section 10-19-38, is drilling at 1,875 feet in salt and potash. Top of salt was at 1,700 feet and 12½-inch was cemented at 1,658 feet. Walker Oil Corp.'s No. 2 Terry, SW cor. SE, Section 10-19-38, is drilling at 1,500 feet. Shell Petroleum Corp.'s No. 1 State, SE SW NE, Section 32-18-38, is drilling at 3,460 feet, and Gypsy Oil Co.'s No. 1 Grimes, NW cor., Section 32-18-38, at 200 feet. Ohio Oil Co.'s No. 1 State-Northrup, NE NW SE, Section 32-18-38, is drilling at 3,050 feet after mudding off gas at 2,833 feet. Amerada Petroleum Corp.'s No. 1-A State, SW NW NE, Section 32-18-38, is bottomed at 210 feet in red rock and rigging rotary. Empire Gas & Fuel Co.'s No. 1 Fowler, NE cor., Section 31-18-38, is drilling at 700 feet, and Amerada Petroleum Corp.'s No. 2 McKinley, SE cor. NW, Section 30-18-38, is drilling at 1,300 feet. George F. Getty, Inc.'s No. 1 McKinley, SW cor. NE, Section 30-18-38, is bottomed at 245 feet and running 12½-inch. It commenced spudding on May 6. Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30-18-38, is drilling at 1,970 feet in hard salt and potash. Top of salt was at 1,576 feet and elevation 3,656 feet. W. C. McBride, Inc.'s No. 1 McKinley, SE cor. NE, Section 30-18-38, is moving in, and Humble Oil & Refining Co.'s No. 5 Bowers, NW NE SE, Section 30-18-38, is spudding at 80 feet in red rock and sand. Humble's No. 4 Bowers, SE cor., Section 30-18-38, has rig up, and its No. 2-A Bowers, NW cor. SE, Section 30-18-38, is rigging up. Amerada Petroleum Corp.'s No. 1 McKinley, NW cor., Section 30-18-38, is drilling at 2,465 feet. California Co.'s No. 1 Grimes, NW SE SE, Section 29-18-38, is rigging, and Tidal Oil Co.'s No. 1 Grimes, SW NE SE, Section 29-18-38, is drilling at 1,521 feet in sand and red rock. Humble's No. 3 Bowers, SW cor., Section 29-18-38, cemented 12½-inch on bottom at 218 feet. Landreth Production Corp.'s No. 1 State, SW cor. SE, Section 7-18-38, is drilling at 250 feet, and Shell Petroleum Corp.'s No. 1 McKinley, SW cor., Section 19-18-38, is bottomed at 3,203 feet and pulling core with an oil show. Texas Pacific Coal & Oil Co.'s No. 1-G State, SE cor., Section 24-18-37, is drilling at 2,806 feet in anhydrite. It bottomed salt at 2,520 feet. Texas Production Co.'s No. 1-C State, NE cor., Section 25-18-37, is drilling at 700 feet. Fisher & Lowrie's No. 1 State, NE cor. NW, Section 11-18-36, west of the Hobbs area, is drilling in lime at 5,022 feet. It had an oil show at 4,985-5,000 feet.

#### Cooper Area—Lea County

Texas Pacific Coal & Oil Co.'s No. 3 State, NW SW NW, Section 21-23-36, which ran into sulphur water at 3,806-08 feet upon being drilled deeper from 3,717 feet, has been plugged back to 3,788 feet and is averaging 380 bbls. of oil and 115 bbls. of water per day. Same company's No. 4 State, NW NE NW, Section 21-23-36, is drilling in brown lime at 3,622 feet. The 7-inch casing was cemented at 3,600 feet. Cranfill & Reynolds' No. 1-C State, SW SE SW, Section 16-23-36, was drilled to 3,953 feet and encountered sulphur water at 3,856-60 feet. At 3,953 feet water was flowing over the top. It is plugging back.

#### Eunice Area—Lea County

Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, is shut down for water at 917 feet. The 16-inch was cemented at 645 feet. Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE, Section 6-22-36, is bottomed at 4,237 feet and plugging back. It encountered more sulphur water at 4,204 and 4,232-37 feet.

#### Maljamar Area—Lea County

Maljamar Oil & Gas Co.'s No. 3 Baish, SE NE NW, Section 21-17-32, is drilling at 2,850 feet.

#### Jal Area—Lea County

Midwest Refining Co.'s No. 34 Farnsworth, SW SE SE, Section 13-26-36, is drilling at 920 feet in red rock with hole full of water.

#### Southwest Area—Eddy County

Two failures in the area south of the Artesia Pool and west of the Pecos River were reported. F. B. Van Horn's No. 1 Santa Fe, SW SE SE, Section 18-19-26, had sulphur water at 2,180 feet and was abandoned at that depth. R. D. Compton's No. 1 State, SW cor. NW, Section 2-20-25, was abandoned at 1,940 feet. It had 10 small shows of oil, but formations were two hard to give it up in commercial quantities.

#### Maljamar Area—Eddy County

Henderson, Dexter & Blair's No. 1 Grier, SW cor. NW, Section 21-16-31, is drilling at 3,160 feet. It had a show for 500,000 feet of gas at 3,035 feet. Leonard & Levers' No. 3 State, NE SW, Section 21-17-29, is drilling at 1,800 feet, and Pueblo Oil Co.'s No. 5 Russell, SW cor. NW, Section 18-17-31, is drilling at 3,150 feet. It encountered an oil break at 3,011 feet.

#### San Juan County

San Juan County produced 624,809 bbls. of oil in 1929, as reported by the United States Geolgical Survey. Of this, Hogback Dome produced 118,470 bbls.; Rattlesnake, 460,321; Table Mesa, 44,-018; and miscellaneous, 2,000. The Hogback, Table Mesa and Rattlesnake Domes have had no drilling for some time except the completion of the Pennsylvanian test at Rattlesnake last year. The operating companies have Indian leases in large

(Continued on Page 138)

## FORTY WELLS ARE NOW PRODUCING IN THE TURNER VALLEY DISTRICT

By Victor Lauriston
*Staff Correspondent, Canadian Fields*

CHATHAM, Ontario, May 17.—Official figures of Turner Valley production for April show a total of 87,278 bbls. of crude naphtha and light crude oil, representing a marked decline from the production of 105,835 bbls. in March. The latter established a record for the field. The April figures show total deliveries of 77,917 bbls. to Imperial Oil, Ltd. This total includes 5,839 bbls. of light crude, 19,813 bbls. of discolored naphtha which rates about the same price as light crude, and 52,265 bbls. of crude naphtha. Deliveries to Regal refineries for the month totaled 9,361 bbls.

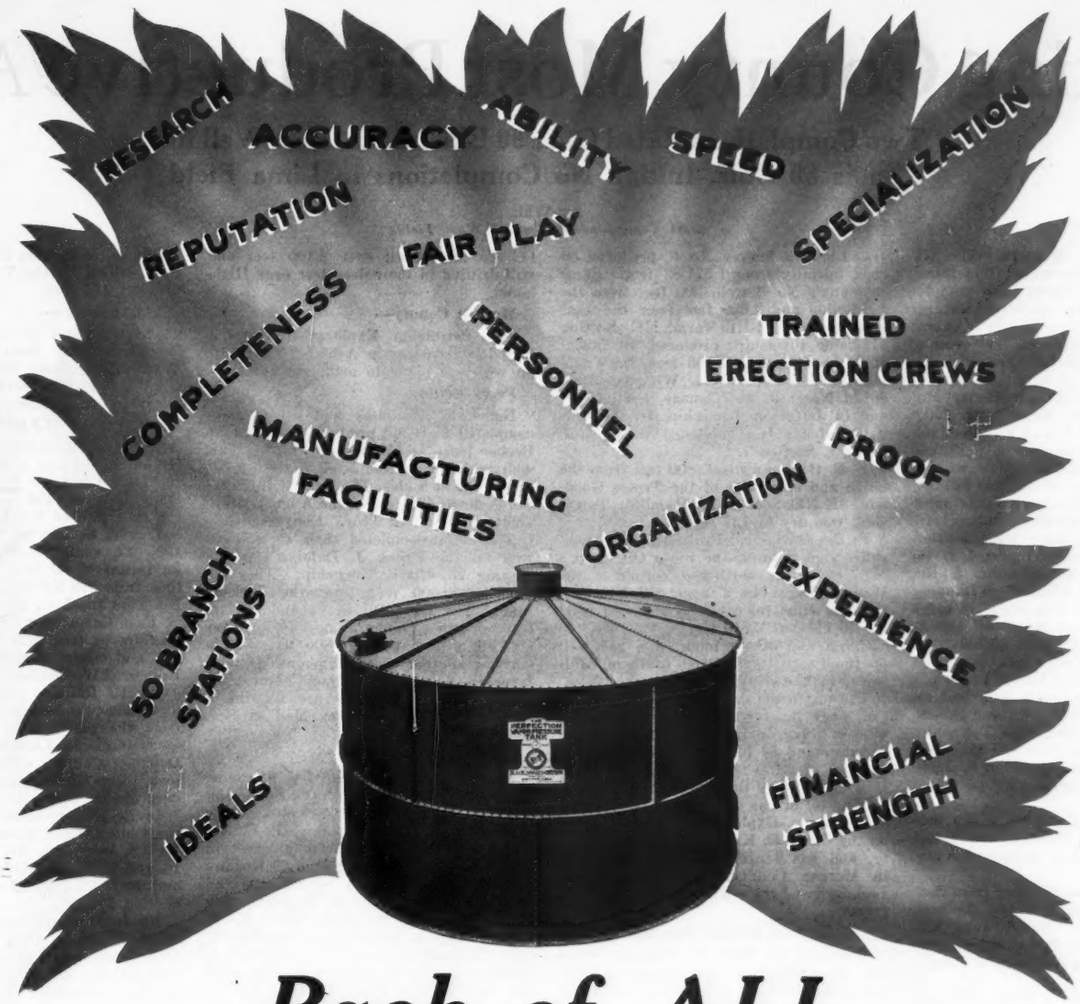
The detailed figures show a total of 40 producing wells. Eight wells delivered light crude, 14 delivered the lower grade of naphtha, and 14 delivered the higher grade of naphtha, with 8 making unclassified deliveries to the Regal refineries. Three wells produce both naphtha and crude, and one well produced both naphtha grades.

Decline in production was due to partial freezing of several of the larger wells, including Lowery Petroleums' No. 1, whose output dropped to 1,147 bbls., Okalta Oils' No. 1 and the Home producers. The leading producer of the month was Home Oil Co.'s No. 3, which made 10,261 bbls. Royalite's No. 17 came second with 6,572 bbls.; Home's No. 4 third with 6,531 bbls., and Home's No. 1 followed with 6,402 bbls; and Northwest-Associated's No. 1 followed with 6,217 bbls. The field has 11 wells each running above 100 bbls. a day. Royalite's No. 4, once the outstanding producer, made 3,710 bbls., or around 124 bbls. a day.

The partial freezing of several large producers was not offset by new production from several wells which appeared in the production list for the first time. The best of these was Model Oils' No. 1 in the North Turner Valley which made 2,497 bbls. in 21 days. Among the new producers, Baltic Oils' No. 1 made only 329 bbls.; Sterling Pacific Oil Co.'s No. 1 showed 1,062 bbls.; Mayland Oil Co.'s No. 1 delivered only 182 bbls.; Royalite's No. 23 made 673 bbls. All these wells were shot after normal methods failed to develop satisfactory production in the deep lime.

For May, the outlook is improved by the bringing in of Calmont Oils' No. 2. If this well on steady production holds up to its early promise, the figures for May are likely to establish a new record. The wet gas flow was measured at 42,-840,000 feet a day, coming from a depth of 165 feet in the lime at 4,975 feet. The test got the lime considerably higher than the Home producers in the same section, and got its big production a little higher in the lime. It is apparently on or near the high point of the structure. It is claimed to be the largest

(Continued on Page 168)

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# Licking County Most Productive Area

## Two Completions Rated Over 90 Bbls. Each. Best Well in Illinois 80 Bbls. Initial. No Completions in Lima Field

By Whit
*Staff Correspondent, Central West Fields*

FINDLAY, Ohio, May 19.—The old Lima Field of northwestern Ohio failed to report any completions since the last review. In the Central Ohio area few completions were reported. O. C. Smith and others' test on the Henry Mosher, Section 22, Lake Township, Ashland County, is a light gas producer along with 4 bbls. of oil from 574-609 feet. Licking County proved the most productive area. Murphy and others' test on the Jacob Hackley farm, Section 13, Fallsburg Township, reported at 90 bbls. initial. Hope Construction & Refining Co.'s No. 6 Charles O'Bannon, Section 15, Hanover Township, is rated at 95 bbls. initial and No. 2 on the A. W. Howell, same section, at 10 bbls.

In Muskingum County, Hopewell Township, the Hopewell Gas & Fuel Co.'s No. 3 S. L. Burrier, Section 5, had an initial of 60 bbls. Walsmith and others' No. 1 A. E. Early farm, Clay Township, is reported dry. The Pure Oil Co.'s No. 1 Albert Holman farm, Section 6, Jackson Township, is reported with an initial of 135 bbls.

Ohio Fuel Gas Co. reports a dry hole in No. 2-5,009 T. H. Hoover, Lots 1 and 2, Waterloo Township, Athens County, after drilling deeper.

Two dry holes were reported from Sutton Township, Meigs County: Delbert, Bachelor and others' No. 1 John and Nellie Arnett, Section 7, and Koontz and others' second test on the Mary J. Beegle, Section 20.

Gordon Oil Co.'s No. 2 Dolly Hoffman, Section 35, Washington Township, Tuscarawas County, showed an initial of 10 bbls.

Rallston Oil Co.'s No. 3 William T. Virtue, Lot 10, Wheeling Township, Guernsey County, produced an initial of 25 bbls.

### INDIANA

A general survey of the Indiana Fields indicates an active season of operations is about to develop as not for years have there been as much leasing at this season. Much of the work will be of the wildcat kind although there still remain hundreds of locations yet undrilled on leases now producing and on leases where wells drilled in the early 'nineties have pulled out and abandoned on account of the smallness of the production after years of pumping. None of the counties in the old Trenton Rock area in the northeastern part of the State has been thoroughly drilled, neither have the producing counties in the southwestern portion in what is known as the Princeton-Oakland City Fields, nor up and down the west line of the State from Lake Michigan to the Ohio River. In the southern part of Indiana along the Ohio River more new drilling has been planned than at any time since oil was found in the southern portion. This new activity in the south end is due to the good results of the drill in Daviess, Ohio, and Henderson Counties on the Kentucky side of the Ohio River.

In Southwestern Indiana, in Gibson County, Washington Township, the Big Four Oil & Gas Co. found a dry hole in No. 3 well, 700 feet from the north line and 1,550 feet from the east line of the C. T. Sloan, SW, Section 18, at a depth of 1,467 feet. Same company abandoned No. 1, same farm.

In the Oakland City Field, Clay Township, Pike County, the Mahutska Oil Co.'s No. 2 well, 660 feet from the north line and 225 feet from the east line of the Jess Lidy, in Survey No. 9, produced 50 bbls. initially from 1,571-83 feet. Same company's No. 4 well, 200 feet from the south line and 2,690 feet from the west line of the Ford-Hill farm, NE, Section 31, same township, produced an initial of 35 bbls. from 1,277-93 feet. In Washington Township, C. E. Wohmer abandoned No. 1 J. M. Thomas, Section 19. and in Jefferson Township, Dr. Charles C. Taliaferro, Jr., abandoned No. 1 Frank DeMott, Section 7.

E. E. Bergman's test, 800 feet from the north and east lines of the Tressa Goodwin, SE NE, Section 16, Hamilton Township, was dry at 727 feet.

In the Siosi Pool, Prairie Creek Township, Vigo County, the Sioso Oil Corp.'s No. 18, in the northwest corner of the William Riggs No. 2 farm, SW NE, Section 32, same township, is reported good for 40 bbls. at 2,210 feet.

Speed and others reported a gas well on the Perry Byenn, just south of Milltown, in Crawford County.

The test being drilled by the Dome Oil Co., near the town of Highland, southwest of Gary, in Lake County, found the Trenton and at last report had reached a depth of 2,100 feet. This is practically a dry hole as there is little chance of finding oil or gas below the Trenton.

Petroleum Exploration Co. is drilling on the Claud E. Kinser, in Monroe County, and has arranged to drill two tests in Morgan County, one on the E. S. Langford and the other on the L. J. Ratts farms.

### Indiana Oil and Gas News

Compiled by Paul F. Simpson, state gas superintendent, Department of Conservation, Division of Geology, Indianapolis, Ind.; by counties:

**Crawford County—**

Speed and others are reported as having found a supply of gas in their test at the south edge of Milltown.

**Dubois County—**

The test drilled by the Becca Oil & Gas Co. on the Henry Langebroke farm in Cass Township, was dry and abandoned.

**Elkhart County—**

The second test on the Charles Stuttman farm in Porter Township, Cass County, Michigan, just north of Elkhart, has been completed in the Dundee sand at a little over 700 feet, and is producing 10 bbls. of oil and 25 feet of gas per day. This wildcat, which is many miles from production, was located with geophysical instruments.

**Gibson County—**

The Indiana Oil & Gas Corp.'s well on the Perry Colvin tract in Section 6, Washington Township, was down 1,614 feet where casing was being fished, according to the last reports. The Mann & Huber well on the Thomas Duncan farm in Section 13, Washington Township, is shut down at 1,467 feet. Gas was struck at 1,444 feet. The drill is working below 3,525 feet in the deep test made by the Indiana Oil & Gas Corp. on the L. W. Gudgell farm, in Section 25, south of Oakland City. Same company is down 1,270 feet in the S. McCullough No. 2, in Barton Township, and still drilling. It completed its third well on the Sam Mitchell farm, getting 600,000 feet at 1,690-99 feet. The Big Four Oil & Gas Co. plugged its No. 1 C. T. Sloan, Section 18, Washington Township, after having drilled deeper.

**Lagrange County—**

James Hunt expects to resume drilling soon on the Clair Shoup farm for the Lagrage Oil & Gas Co.

**Lake County—**

C. W. Houk and others, or the Dome Oil Co. are down over 2,100 feet and still drilling in their deep test near Highland.

**Morgan County—**

The Petroleum Exploration Co. has leased 9,000 acres in Ashland Township, on which it plans to make several tests.

**Perry County—**

Roger E. Williams and others have completed a second producer on the John Becker lease at the edge of Troy. This well which was completed in limestone, started off at 8 bbls. The Perry Oil & Gas Co. is down 430 feet in the August Brannicker test east of Troy. Conyers, Rosetzel & Bugg completed their second gas well on the Frank J. Dalaise lease in Section 25, Clark Township. They reported 240,000 feet from the Jackson sand. The Ohio Oil Co. abandoned its test on the Victor James farm after striking water at about 800 feet, but is starting another or the Alphonso Dupont farm in Section 7, Leopold Township. A. F. Glenn and others are starting a test on the John Ramsey land in Section 18, Tobin Township.

**Pike County—**

When last reported, 843 feet of casing was being landed in the Frank Sanderson well in Washington Township, being drilled by Risher and others. P. C. Andrews and others are down 300 feet in No. 1 A. Atkinson in Logan Township. Dr. C. C. Taliaferro abandoned and plugged the No. 1 Frank DeMotte, Section 7, Jefferson Township. His No. 6 on the Della Kime lease in Location 12, Clay Township, is down to 1,442 feet. William Bell and others are drilling at 325 feet on the Fred Lindy property, same township. The Mahutska Oil Co. found gas at 1,571 feet in their No. 2 Jessy Lindy, Survey 9, same township, total depth was 1,583 feet. The No. 4 George Stewart drilled by the H. C. Darby Co., in Section 23, Logan Township, was down 432 feet. C. E. Wohmer and others abandoned and plugged No. 1 J. M. Thomas in Washington Township.

**Spencer County—**

Development work has further extended the Troy Pool in the southeastern corner of the county. It is reported a 30-bbl. well was brought in on the Leith farm in Hancock County, Kentucky, directly across the river from the Troy Pool. The Packard Oil Co. completed its fourth and fifth wells on the Lee Carlton farm in Section 19, Huff Township. No. 4 produced an initial of 18 bbls. from the Jackson sand at 745 feet; but No. 5 was abandoned with only a showing. J. B. Nay and others had to plug the No. 1 Joseph Frazier because of caving, though good showings were reported. This is just south of the Troy Pool. Theodore Seitz completed No. 2 Adolph Grass, just east of the Carlton farm. Oil was found in the Cunningham sand, but the shot burst the casing, as it was reshot in the Jackson sand, where it started at 3 bbls. per hour, with 100,000 feet of gas. The Missouri-Kansas Pipe Line Co. is down 400 feet in the No. 1 M. Spayd in Section 28, Clay Township.

**Sullivan County—**

Charley Scott is planning to drill on the Davis farm near the old Denny Pool in Turman Township. E. E. Bergman abandoned his shallow test on the Tressie Goodwin farm, north of Sullivan, at 727 feet. Backwaters from the Wabash River have receded from the No. 4 C. W. Scott, which has been shot, but no record of initial production obtained. Scot Whitlock and Morris will start a fifth well on the lease. The No. 4 Elmore Williams, in Section 5, Fairbanks Township, drilled by the Twin Creek Oil Co. is down 175 feet.

**Vigo County—**

The third well of the Ohio Oil Co. on the Cash Piety lease in Prairie Creek Township, is down 500 feet. The Sioso Oil Co. is getting near the bottom in its No. 11 on the William Riggs lease No. 1.

### ILLINOIS

The best completion reported from any section of Illinois during the week was the Ohio Oil Co.'s No. 6 well, 166 feet from the south line and 1,504 feet from the east line of the Phillips Frye farm, SW NW, Section 34, Sugar Loaf Township, St. Clair County, which produced an initial of 80 bbls. from the Trenton lime from 678-737 feet. Ellis & Thomas' No. 1 on the I. C. Railroad right of way at East Carondalet, in St. Clair County, was dry at from 529-75 feet. H. J. Logan and others abandoned No. 1 W. H. Breuer, NW, Section 28, same township.

W. E. Rallston drilled a test, 1,240 feet from the south line and 200 feet from the east line of the George Williams farm, in Lamoine Township, McDonough County, which was dry at 380 feet. This field is in the northwestern part of the State.

In Petty Township, Lawrence County, the Ohio Oil Co. abandoned Nos. 4 and 5 C. S. Berkshire, SW, Section 19; Nos. 16 and 38 Perry King, NE, Section 24, and Nos. 21 and 22 G. L. Miller, SE, Section 19.

No late report comes from the test being drilled by Cain & Pollock on the Dave Patton, Location 32, Washington County, nor the two tests being drilled in Monroe County. These are the Chambers and others on the H. Huch, Section 24, South Township, and Trowbridge and others on the John Vogt, Section 1, Waterloo Township, near the old Waterloo Pool.

McColpin & Brooks are still working on the J. H. Handley, Section 34, Embarrass Township, Edgar County, north of the old Casey and Westfield producing areas.

Ranco Development Co. is drilling on the Hazie McKelvey, Location 26, 2 miles south of Coultersville, in Randolph County, and Beck & Butler are drilling No. 1 Adolph Schreiber, Section 30, Red Bird Township.

### SOUTHEASTERN OHIO MEETING

LOGAN, Ohio, May 17.—The Southeastern Ohio Oil and Gas Producers' Association will hold its bi-annual meeting at Logan, Ohio, May 21. The association will have a 6 o'clock dinner at the Easterling Club House, and the meeting will follow. Many important subjects are to come up for consideration, but the highly important subject at this time is the present price of Pennsylvania crude. Producers all through the area of Pennsylvania production are giving their thoughts and attention to the problem of securing a fair and just price for their product.

### GREAT STORM AT BAKU

Baku advices give particulars of a hurricane which has wrought considerable damage in Baku and the neighborhood. The Asneft Oil Trust was the principal sufferer. Thirty derricks were overturned by the hurricane, and some of them entirely destroyed. In consequence of the storm, drilling operations in several parts of the area had to be suspended. In the Bibi Eibat Bay Field the production was reduced by some 500 tons per day.

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# Good Well in Southeast Ohio Deep Sand

## Clay Township, Muskingum County, Has 150-Bbl. Completion. Mead District, Upshur County, West Virginia, Wildcat Looks Like Duster

By D. S. Wakenight
*Staff Correspondent, Eastern Fields*

PITTSBURGH, Pa., May 19. — The deep sand territory in Southeast Ohio reports one good completion. In the northwest quarter of Section 3, Clay Township, Muskingum County, the Robinson Ramsbottom Co. and others completed and shot in the Clinton sand a second test on the Robinson Ramsbottom farm. It produced 150 bbls. the first 24 hours. In Section 16, Rush Creek Township, Fairfield County, M. Myers & Co. have a light pumper on the Williamson-Stuart lots. In Section 13, Marion Township, Morgan County, W. S. Harris has a 5-bbl. pumper on the Mark Gifford farm. In the same township, the Ohio Fuel Supply Co. has a gasser on the Samuel Zumbro farm.

The same company is drilling on the Hiram Hart farm. In Section 35, Alexander Township, the Wiser Oil Co.'s test on the Charles O'Neil farm is a duster. In the same township, the Townsend Oil & Gas Co. has a gasser in the Berea grit at No. 11 on the Sarah E. Penrod farm. In Section 12, Brown Township, Vinton County, I. C. Robinson has a gasser in the Clinton sand on the Lewis P. Drayer farm. In Sutton Township, Meigs County, Smith & Watson have a duster in the Cow Run sand on the Edward Salser farm.

**SOUTHEAST OHIO**

In Elk district, Noble County, F. O. Parks and others have started to drill on the Adam Tewagner farm. In Fearing Township, Washington County, the Fred S. Maister estate and others are drilling on the R. E. Berg farm. In Section 12, Reading Township, Perry County, the Preston Oil Co. is due in the sand on the W. A. Miller farm. In Marion Township, Morgan County, the Ohio Fuel Supply Co. is drilling on the Hiram Hart farm. In the same township, C. C. Bode & Co. are drilling on the S. C. Allen farm.

In the northeast quarter of Section 12, Perry Township, Muskingum County, the Wittmer Oil & Gas Properties has completed a test on the J. J. Moore farm. It is dry at a total depth of 4,202 feet. It was drilled through all sands, including the Red Rock.

In Lot 3, Section 10, Chatham Township, Medina County, the Oko Oil & Gas Co. completed in the Berea grit No. 35 on the Sanford-Watson farm. It produced 15 bbls. the first 24 hours. In the northwest quarter of Section 9, Lake Township, Ashland County, the Great Lakes Oil Co. completed in the Berea grit a second test on the Bard Easley farm. It is a light gasser, showing some oil.

**Muskingum County**

In Washington Township, Muskingum County, the Atha Oil Co. completed a test on the Bateman heirs' farm. It is a gasser in the Clinton sand good for 500,000 feet. In Tuscarawas Township, Coshocton County, Bell Brothers have a very light pumper on the Adam Stockman farm. In Section 9, Monroe Township, Coshocton County, the Ohio Fuel Gas Co.'s test, on the Lewis Reiss farm, is a gasser in the Clinton sand and showing a little oil. At the present it will be operated as a gas well.

In Section 1, Perry Township, Licking County, the Kuntz-Hulse Co., Inc., completed No. 12 on the Joseph Chaney farm. It is an 8-bbl. pumper. In the same Township, the Hope Construction & Refining Co.'s No. 6, on the Sarah M. Rector farm, is a duster. In Franklin Township, A. W. Patton and others have a rig up on the Albert Outridge farm.

In Lot 21, Oxford Township, Tuscarawas County, the Gordon Oil Co.'s test on the Phillips Lameck farm is dry. The rig for a second test on the same farm has been completed. In the same township, the Traders Oil & Gas Co. has a gasser on the Oscar Quillin farm.

In Ludlow Township, Washington County, J. F. Graham & Co. have a very light pumper on the Knowlton & Co. farm. In the same township, W. A. Reed is drilling on the Martha Thomas farm. In Lot 104, the Lorntz Oil Co. has a very light pumper on the Catherine Lorntz farm. In Cross Creek Township, Jefferson County, August F. Becker, trustee, has a 2-bbl. pumper on the Becker farm. In Independence Township, H. Schramm & Co. have started to drill on the John H. Ward farm.

**Belmont County**

In Section 1, Southeast Township, Belmont County, the W. C. McBride Co. completed a second test on the Howell & Bement farm. It is a natural producer in the Keener sand and produced 100 bbls. the first 24 hours. In Section 11, Wheeling Township, Guernsey County, the East Ohio Producing & Refining Co. completed in the Niagara lime a test on the John A. Baird farm. It produced 45 bbls. the first 24 hours, from the same formation.

At Bollin Mills, Section 4, Knox Township, Vinton County, H. C. Farmer and others have a fair gasser in the Berea grit on the John and Louisa Stanley farm. In the southeast quarter of Section 16, Brush Creek Township, Muskingum County, the Davis Oil Co.'s test, on the Thomas B. Weaver farm, has been drilled into the Medina sand to a total depth of 4,380 feet. It is a duster in all sands.

In Section 22, Liberty Township, Guernsey County, J. T. Watson and others completed in the Niagara lime a test on the J. T. Walters farm. The hole stands full of salt water and it will find a place in the dry hole list. In Section 32, Pleasant Township, Perry County, the Allegheny Oil Co. has a duster in the Berea grit at No. 16 on the J. J. Porter farm.

In Section 11, Sutton Township, Meigs County, Delbert Bachelor & Co. have a duster in the Cow Run sand at No. 3 on the John and Nellie Arnett farm. In the same section, the Twenty-Five Association, Inc., has an 8-bbl. pumper in the Cow Run sand at No. 17 on the William Carnahan farm.

**WEST VIRGINIA**

On Trace Fork, DeKalb district, Gilmer County, West Virginia, C. B. Lewis & Co. have drilled in a second test on the Saphrona Amos farm. It is good for 20 bbls. a day. On Bull Fork of Tanners Creek, same district, Park Bowser has a duster at No. 3 on the Robert Mitchell farm.

In Grant district, Ritchie County, the Herbert Flanagan Oil Co.'s test on the DeVaughn farm is a gasser in the Squaw sand. In Mannington district, Marion County, Sutton Brothers have a gas well on the H. Straight farm. In New Milton district, Doddridge County, Travis Brothers' test on the Granville Willis farm is dry and abandoned. In Union district, Tyler County, Morgan Brothers have a gasser in the Keener sand on the J. B. Dancer farm. In Ellsworth district the Warden Drilling Co. has spudded in on the James Priest farm. On Sugar Camp Run of Reedy Creek, Reedy district, Roane County, the Hope Construction & Refining Co. has the rig completed for No. 4 on the A. Vandal farm.

In Henry district, Clay County, the Virginian Gasoline & Oil Co. completed in the Big Injun sand No. 23 on the Brown, Swan, Goshorn & Geary tract. It is a 12-bbl. pumper. In Center district, Gilmer County, the McCall Drilling Co. completed a second test on the E. B. Baker farm. It is a gasser in the Maxon sand.

In Grant district, Cabell County, the Hamilton Gas Co. completed a test on the Lafayette Knight farm. It is a gasser in the Gordon sand. In Jefferson district, Lincoln County, the United Fuel Gas Co.'s No. 2,429 on the J. P. Lovejoy farm is a gasser in the Berea grit.

**Lincoln County**

In Sheridan district, Lincoln County, the Empire State Gas Co. is spudding in on the B. L. Butcher farm. In Scott district, Boone County, the Owens Bottle & Machine Co. has made a location on the Ora Barker farm and rig up on the Sylvester Wheeler farm. In Logan district, Logan County, the West Virginia Gas Corp. is rigging up on the Henry Mitchell farm. In Union district, Lincoln County, E. R. Cameron has made a location on the Julia A. Dreadlove farm.

On the Ohio River, Grant district, Hancock County, West Virginia, R. J. Braden & Co. completed in the Berea grit No. 39 on the C. E. Brenneman farm. It is a 2-bbl. pumper. In Grant district Ritchie County, Flanagan & Co.'s test on the Albert DeVaughn farm is a gasser in the Squaw sand. In Scott district, Boone County, E. R. Cameron has a gasser in the Berea grit at a second test on the W. L. Stone farm.

In Jefferson district, Lincoln County, Pridemore & Adkins have a gasser in the same formation on the Albert Simpson farm. In the same district the Mud River Gas Co. has a gasser on the Eliza Adkins farm.

In Spencer district, Roane County, Paul Weekly & Co. are building a rig on the Gay M. Sergent farm. In Lee district, Calhoun County, Edward Smith and others are rigging up to drill on the Schoolhouse lot. In Mead district, Upshur County, the Union Gas Corp. is drilling at 3,520 feet on the G. W. Simons farm. This is nearest to a wildcat to any well drilling in West Virginia and looks as if it would find a place in the duster list. In Center district, Gilmer County, the Steer Creek Oil & Gas Co. has part of the rig material at a location of A. H. Stump farm. In Jefferson district Lincoln County, the Federal Gas Co. is rigging up on the Louisa J. Tutor farm.

In Spring Creek district, Wirt County, the Federal Oil & Gas Co. has started to drill on the Enoch Lewis farm. On Crane Nest Run, Reedy district, Wirt County, the Heck Oil Co. has the rig completed for No. 3 on the J. E. Watkins farm. In Church district, Wetzel County, D. W. Null & Co. have rigged up on the Ashcraft heirs' farm. In the same district the Manufacturers Light & Heat Co. is due in the Big Injun sand on the Mary A. Teagarden farm.

**Marshall County**

In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has started to drill on the A. L. and R. Evans farm. In the same district the Valley Run Oil & Gas Co. has started to drill on the Stern Brothers' farm. In Geary district, Roane County, G. L. Cabot has part of the rig material at a location on the J. L. Boggs farm. In Spencer district, Paul Weekley and others are building a rig on the G. M. Sergent farm. In Washington district, Jackson County, Lee Sheppard and others have started to drill on the Wesley Streets farm. In Ravenwood district. Edward Hess and others are building a rig on Arthur S. Gray farm.

On Spruce Run of Little Creek, Spencer district, Roane County, Paul Weekley and others have started to drill on the Lon Epling farm. It is 1,100 feet northeast of the United Fuel Gas Co.'s test on the L. C. Hildreth farm.

**SOUTHWEST PENNSYLVANIA**

In Perry Township, Greene County, Pennsylvania, the Philadelphia Gas Co. has drilled old No. 4 on the Spencer Stephens farm to the Bayard sand and has a light gasser.

## HEAVY DRILLING PLAY FORECAST IN M'LEAN COUNTY, KENTUCKY

By Whit
*Staff Correspondent, Kentucky-Tennessee*

OWENSBORO, Ky., May 17.—Just at this time McLean County is coming into the limelight and a heavy drilling play is forecast, the original well having been drilled a couple of years ago by Dimmick Brothers, on the Ratliff farm, near the Daviess County line, and during the past few months several wells have been drilled by the Ohio Oil Co. on the McManama farm that have proven good producers. Thompson & Cameron also have a fair production on another McManama lease close by, and at this time the production of the county comes close to 5,000 bbls. of oil monthly. The new Maxwell Pool lies in three counties of Ohio, Daviess and McLean, and it is there that much new work is planned. Good leases in this pool so far are the Salmon and Blackaby operated by the Leeper Oil Co., the two leases reported to be making around 100 bbls. daily. In this same pool, Murray, Bolling and others' No. 1 Whittaker, about 1,500 feet west of Cameron and others' good wells on the McManama farm and on the opposite side of Grindstone Hill, is reported showing around 25 bbls. at 4 feet in the sand, which is reached at around 900 feet, and makes a nice extension to the producing area of the pool.

There is no rush of the drill in the Stray sand areas of Ohio County, as the operators are taking things quiet in hopes of not increasing the production to a point that might mean a cut in the price of crude. It is in this Stray sand that the big wells are found in pools like the Buford area, the Bartlett, Barnett Church and other producing areas in the western portion of Ohio County.

Most of the territory in the southwestern part of Kentucky is attracting much attention, not alone for oil, but gas as well as most of the towns in that area are anxious for a supply of natural gas. It is rumored that Franklin in Simpson County; Scottsville in Allen County; Bowling Green in Warren County; Russellville in Logan County; Elkton in Todd County; Hopkinsville in Christian County; Morgantown in Butler County; Princeton in Caldwell County; Madison in Hopkins County; Greenville in Muhlenberg County, all county

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# Andrews County Is Most Interesting

## Three Wells About Due for Production. Well in North of Penn Pool Showing for Small Pumper. Ward County Tests

By L. E. Bredberg
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., May 19.—In the last week's reports the Penn Pool, Ector County, was described as apparently defined on the north, and although one well on that side now looks good for a small pumpper, the general opinion stands. Independent Oil & Gas Co. and Tidal Oil Co.'s No. 1 Edison (Scharbauer), located in the NW cor., Section 6, Block 44, is still shut down at 3,800 feet making only one bailer of oil every two hours. It is to be deepened in an effort to pick up an increase in oil. Porosity of the lime is the greatest feature dealing with production in this pool, and if the lime in this test by any chance softens the test may yet be developed into a small producer.

Texas Pacific Coal & Oil Co.'s No. 1 McKenzie, approximately 1 mile northwest of that test, is looking more favorable than the former, for after a 220-quart shot in lime from 3,720-75 feet the hole filled with 800 feet of oil in a short time, and after standing overnight it had filled 1,700 feet, signifying it was probably good for a small pumper, and helping to bolster the belief the pool would run to the northwest as many prophesied. This test, however, is no doubt the limit of the pool in that direction.

Only two wells were completed in the Penn Pool during the week, one by the Humble Oil & Refining Co. for an initial production of 103 bbls. after a 180-quart shot from 3,710-80 feet, and the second well by the Landreth Production Corp. for an initial production of 734 bbls. from a total depth of 3,720 feet, after a 120-quart shot from 3,589-3,650 feet. Most of the wells in this pool have been shot to increase production, and in the majority of cases it has proved successful for the extremely tight lime fails to lend itself readily to making good producers until it is given a shot or two to disintegrate the hard strata. The Landreth well was formerly completed in February for an initial production of 806 bbls., and a shot was set off to boost the production, but in this case failed.

Parties who were seeking drilling permits for tests on the Texas & Pacific Railroad right of way, which lies just south of the Independent and Tidal's test in the Penn Pool, are no doubt holding up such locations as might have been contemplated before this test showed up as a probable failure, for to date no location has been reported for the right of way. If a permit is granted for a test on the right of way the location will probably be withheld until the test north of the tracks proves a producer, and at present it looks as if this is quite improbable.

### Andrews County Tests

Andrews County is now the most interesting spot in the Permian Basin for at present there are three wells just about due for completion. No. 1 is down to 4,302 feet with good chances for making a producer after topping the gray lime at 4,050 feet, and pay at 4,292 feet, and a good oil show appearing in the test. This test belongs to the Deep Rock Oil Co. and others, owners of No. 1 Ogden, a north offset which is the discovery well of this, the first oil pool in the county. No. 1 King is 330 feet from the north and 2,310 feet from the east of Section 11, Block A-46, and the discovery well is in Section 6. Another day or two of drilling should prove the value of this test, and bring the second producer to the surface.

No. 1 Miles, belonging to the same owners, 1½ miles south of these wells, in Section 22, is shut down at 4,176 feet after encountering gas at 4,164 feet blowing tools up the hole, and possibly causing a fishing job. It topped the gray lime at 4,030 feet, 10 feet higher than the discovery well.

No. 1 Mathis, the third test in this area, in Section 4, is drilling below 4,104 feet. Top of the gray lime in this test was logged at 4,055 feet, 15 feet lower than the discovery.

Hard digging is found at these depths in this part of the basin, consequently it is slow going, but within the week all three tests should divulge whether they are all to be producers, extending the pool, or if dry, defining it in their respective directions. Tanks are up ready to take care of any new producers that may be brought in, but they will all have to wait several weeks for pipe line outlet for the Atlantic Pipe Line Co., which is to lay a line from Midland, through Andrews County near the Deep Rock Pool to Hobbs, N. Mex., has just started on its line, and it will be some time before it is completed and ready to run any oil.

Cranfill & Reynolds' No. 1 Tubb, 2,310 feet from the north and 330 feet from the east of Section 8, Block B-27, P.S.L., on the western side of Crane County, which was exceedingly interesting from a geological standpoint, and which looked quite favorable for production, surmounted the fishing job which has been holding it up at 2,420 feet, and is drilling below 2,500 feet after topping the lime at 2,455 feet. At present the test does not look as interesting as it did.

### Ward County Show

Tex-Oil Production Co.'s No. 1 Redman, 1,980 feet from the southwest and 1,980 feet from the northwest lines of Section 152, Block 34, H.&T.C. Survey, in the southwest part of Ward County, many miles from production, logged the black lime at 5,037 feet, and topped the Delaware sand at 5,070-77 feet encountering a showing of oil and gas in this formation. The test is almost due south of the Hendricks Pool, Winkler County, approximately 17 miles, and is only about 26 miles southeast of the Wheat Field in Loving County which is producing high gravity sweet oil from the Delaware. Consequently this test is exceedingly interesting from the standpoint of the latter correlations, and regardless of whether it makes a producer the showings already found will probably result in other tests being made between this one and the Loving County Field, in an endeavor to pick up the Delaware sand and commercial production. Other tests have been drilled in the intervening distance between this test and the Loving Pool, but it is believed none of them went to a sufficient depth to pick up the Delaware.

### Shipley Pool

In the Shipley Pool, Ward County, Shell Petroleum Corp.'s No. 1 Owen, in Section 16, has been completed for a 50-bbl. well after several months of drilling and testing. Total depth of the hole was taped at 4,415 feet, but was plugged back to 3,035 feet and shot with 200 quarts from 2,890-2,930 feet. Top of the pay was found at 2,890 feet.

Shipley's No. 4 Hayzlett, 2,050 feet from the southeast and 2,420 feet from the southwest of Section 17, was dry and abandoned at a total depth of 3,127 feet. It had an oil showing at 2,532 feet and was shot with 60 quarts from 2,940-70 feet, and a second shot of 35 quarts from 2,640-57 feet, but failed to produce. This is the first real disappointment in this field where there are 11 producers at present.

The California Co.'s No. 1 J. G. Allen, 330 feet from the SE SW, Section 90, Block 1, W.&N.W. Survey, north offset to Independent Oil & Gas Co.'s extension well of the Wheat Field, had an oil showing in sand at 4,312-15 feet and is now testing. It will probably be shot. This test has a surface elevation of 2,730 feet, and topped the Delaware at 4,247 feet. It will be the second well in the new extension, if it proves a commercial producer.

### WEST TEXAS PRODUCTION

| County— | No. Wells. | Bbls. |
|---|---|---|
| Andrews | 1 | 166 |
| Crane | 343 | 35,200 |
| Crockett | 46 | 1,645 |
| Ector | 28 | 13,625 |
| Fisher | 7 | 930 |
| Garza | 5 | 49 |
| Glasscock-Howard | 507 | 38,000 |
| Jones | 73 | 1,370 |
| Loving | 20 | 1,240 |
| Mitchell | 144 | 2,240 |
| Pecos | 450 | 118,562 |
| Reagan | 259 | 16,395 |
| Runnels | 3 | 19 |
| Scurry | 5 | 16 |
| Taylor | 2 | 91 |
| Upton | 251 | 9,301 |
| Ward | 25 | 1,541 |
| Winkler | 603 | 76,125 |
| Total this week | 2,772 | 316,515 |
| Total last week | 2,765 | 317,773 |
| Difference | 7 | 1,258 |

### Taylor County Well

In Taylor County A. H. Gibson's No. 1 Cody, located in Lot 2, Guadalupe County School Lands, is shut down at 2,467 feet. The well was plugged back to 2,396 feet and shot with 60 quarts from 2,374-93 feet and swabbed 75 bbls. of oil per day after the shot. Tubing is now being run in an effort to flow the well. This well is a west offset of the Adams-Ferguson and Hobbs' No. 1 Lowe, which has been producing for some time.

Laurel Oil & Gas Co.'s (Gibson & Johnson's) No. 1 Bingham, in Section 31, Guadalupe County School Lands, south of the Dunnigan and Shell discovery well, is shut down at 2,250 feet flowing salt water, after encountering a hole full of water at 2,135 feet. Six-inch casing will be run to shut off the water. This test had an oil showing in sandy lime at 2,099-2,100 feet and was estimated good for 12 bbls. from this pay, but was drilled deeper in hopes of finding an increase, but failed in this effort.

Another test in this area, Mid-Continent's No. 1 Lindsey in Section 22 of the School Lands Survey, is shut down at 2,378 feet. It had a rainbow show of oil in sandy lime at 2,350-52 feet, and an oil show in sandy lime at 2,375-78 feet, but does not look extra promising for making a producer.

Dunnigan & Hyer have made location for No. 1 A. B. Teoff, 1,502 feet from the north and west of a 218-acre farm in the W. Avery Survey, approximately 1,500 feet north and east of the Dunnigan and Shell producer.

### Holds Yates Production

The Yates Pool Advisory Committee met this week and voted to hold production of that field down to the present emergency allowance of 110,000 bbls. until June 30 when the present proration period expires. It is not known just what will be done at the expiration of that period, but due to the fact that Ector County is increasing in daily average production, boosting West Texas production, and that one of the pipe line companies which is now taking oil from the Yates Pool is also drawing crude from the Hobbs area, New Mexico, it is believed that the 110,000-bbl. allowance will be maintained instead of raising the allowance back to the former daily amount of 130,000 bbls. as it was before the curtailment was made in March.

At a meeting of the Howard-Glasscock County Advisory Committee it was agreed to hold all wells in those pools at

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## WILDCAT OPERATIONS IN WEST TEXAS

Week Ended May 10

| Company, farm and location— | Remarks— |
|---|---|
| **ANDREWS COUNTY** | |
| Deep Rock Oil Co. et al's No. 1 Mathis, 900 ft. from S and W. Sec. 4, Blk. A-46, Public School Land | Top salt 1,730 ft.; shut down 4,100 ft. |
| Deep Rock Oil Co.'s No. 1 Miles, 990 ft. S, 1,650 ft. E of NW cor., Sec. 22, Blk. A-46, School Land | 2,000,000 ft. gas at 2,913-16 ft.; shut down 4,149 ft. |
| Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land | Shut down 1,779 ft. |
| Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, School Blk. A-46 | Top salt 1,697 ft.; shut down 4,290 ft.; show oil 4,290 ft. |
| R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Blk. | Drlg. 1,010 ft. |
| **BORDEN COUNTY** | |
| Phillips et al's No. 1 Goode, 330 ft. N and E of SW cor. SE of Sec. 46, Blk. 33, Twp. 4n, T.&P.R.R. Sur. | total depth 3,875 ft.; plugging. |
| **BREWSTER COUNTY** | |
| Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur. | Shut down 1,935 ft. |
| E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur. | Shut down 1,250 ft.; hole full water 1,135-85 ft. |
| Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.&S.F. R.R. Sur. | Show oil 1,830 ft.; shut down 2,290 ft. |
| Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine | Shut down 1,750 ft. |
| **COKE COUNTY** | |
| Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,340 ft. W of SE cor., Sec. 35, Blk. 1-A, H.&T.C. Sur. | Drlg. 1,870 ft. |
| Cates & Fitzhugh's No. 1 Mimms, 660 ft. N and W of SE cor., Sec. 39, Blk. W, T.&P.R.R. Sur. | Location. |
| Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft. | Shut down 3,050 ft. |
| **CONCHO COUNTY** | |
| Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120 | Location. |
| Duffy et al's No. 1 Callan, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R. Sur. | Spudded and shut down. |
| Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock | Shut down 735 ft. |

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# Hartley County Wildcat Starts Play

## Cooke County Tests Not as Good as Expected. Extension in Clay County. Western Shackelford County Producer

By L. E. Bredberg
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., May 19.—Hartley County's wildcat gasser in the C NE, Section 81, Block 44, H.&T.C. Survey, is now shut down at 3,828 feet with a hole full of water. The test will probably be plugged back to complete as a gas well. Gas sand in this wildcat was logged at 3,565 feet, and an estimated 12,000,000 feet of gas drew much attention to this area which is far from any gas or oil production, and the companies which are interested in the gas producing areas of Moore, Hutchinson and Potter Counties may well be expected to direct a good bit of activity in this new direction.

Cooke County's two wildcats which have attracted much attention to the southwest part of that county during the past three weeks, are not showing as good as first hoped. Gulf Production Co.'s No. 1 Donald in the J. Guffey Survey, 17 miles southwest of Gainesville, is fishing a liner at 2,902 feet with no increase in oil or further showings having been encountered. The Faith Oil Co.'s No. 1 Sugg, 2½ miles east of the Gulf test, in the Harriett Nail Survey, has about 100 feet of oil in the hole, and is shut down at 1,327 feet. Top of the oil sand was drilled into at 1,319 feet, and this showing, along with the showing in the Gulf test, made this area take on increased activity, and made it look extremely promising as a harbinger for the first pool in this part of the county.

Burns and Long appear to have an extension well in their No. 1 Wilson in Section 108, Block 1, American Tribune New Colony Lands, approximately 1 mile north of the Old Development Pool in the John Richards Survey. This test topped a dry sand from 1,451-56 feet, a sandy shale at 1,456-57 feet, and an oil sand from 1,457-59 feet. Water and a slight showing of oil was found from 1,459-61 feet, and the well was plugged back to 1,460 feet. It is standing with 900 feet of oil in the hole, and promises a small well, and an extension to the pool.

### Clay County Extension

Another extension was made in another area of the Wichita Falls district this week when Dawson's No. 2 Sam Roberts in Section 74, Parker County School Lands Survey, Clay County, extended gas production about 1½ miles southeast when it topped a gas sand at 1,582 feet and the well started making better than 3,000,000 feet.

The Sunray Oil Co. purchased a half interest in the Operators Royalty Co. and the Dana Oil & Gas Co. and Barnsdall Oil Corp.'s block around the Vanderweide Pool, northeast of Dumas, in Moore County, the former company and the Barnsdall Oil Corp. now holding all of the block with the exception of one-eighth of the acreage, other than the 160 acres on which No. 1 Jones, the discovery well of this pool, is located, which was retained. by the former owners.

The Jones well, in Section 164, Block 3-T, T.&N.O. Survey, was the starter for a big "play" in this area, and Moore County has been included in some of the large gas acreage purchases which have been made in Hansford and Sherman, Hutchinson and Potter and Carson Counties of late.

The first oil show in the Jones well was found at 3,360 feet, and the second lime pay was logged at 3,387-95 feet. During the first hour the well flowed 130 bbls., later tapering to about 20 bbls. per hour, water increasing to cut down the flow of oil. Total depth of the well is 3,410 feet. Twenty-six million feet of gas was flowing with the oil.

On the western side of Shackelford County, Roeser and Pendleton completed their No. 1 Morris and Buie for a 122-bbl. well at a total depth of 1,621 feet. Top of the pay was found at 1,600 feet. This well is in Section 201, E.T.R.R. Survey in a new area of the county, which was opened last fall. Another producer of theirs was completed in Section 191 for 12 bbls. initial production at a total depth of 1,767 feet after topping the pay at 1,704 feet. This gives the pool two more producers. The first well is now prorated to 50 bbls. per day by the Humble Pipe Line Co. which is running the oil.

Bateman & Co.'s No. 1 Manning, near the town of Caddo in Stephens County, the test which was shot with 2,000 quarts last fall, was abandoned as dry at a total depth of 4,053 feet. The shot failed to make a producer of the well, and after cleaning out, and drilling deeper without any favorable results, it was decided to abandon the test.

The Lloyd Pool, south of Santa Anna in Coleman County, received one of the best wells ever completed this week. The Lloyd Oil Corp. completed its No. 9 Bartholomew for an initial production of 215 bbls. at a total depth of 1,452 feet. The first oil show was struck at 1,439 feet, and a gas sand was encountered at 1,422 feet.

### RANGER COMPLETIONS
**Week ending May 18**

**Brown County**

Mitcham and others' No. 1 Terry was dry and abandoned at 1,656 feet. E. L. Smith Oil Co.'s No. 22 George, oil show at 1,335 feet, initial production 18 bbls., total depth 1,358 feet. Texas Unity Oil Co.'s No. 2 Miers was dry and abandoned at 1,209 feet. Ven-Mex Oil Co. of Texas had oil show at 1,290 feet, shot 20 quarts 1,290-1,305 feet, total depth 1,318 feet, initial production 102 bbls. Woodruff and others' No. 3 George had oil show at 1,275 feet, shot 18 quarts from 1,276-86 feet, total depth 1,293 feet, initial production 7 bbls. Greene Production Co.'s No. 9 Moore, total depth 1,255 feet, shot 2 quarts from 1,249-55 feet, initial production 8 bbls. Humble Oil & Refining Co.'s No. 2-A Kilgore had oil show at 1,173 feet, total depth 1,200 feet, initial production 418 bbls. Humble Oil & Refining Co.'s No. 1 Whiteside had oil show at 1,297 feet, total depth 1,313 feet, shot 10 quarts from 1,308-13 feet, initial production 40 bbls.

**Callahan County**

Guffy and others' No. 1 Finley was dry and abandoned at 1,102 feet. Lewis Production Co.'s No. 1 Alexander had oil show at 1,003 feet, plugged back to 1,006 feet, total depth 1,007 feet, initial production 25 bbls. Taylor's No. 1 Biggerstaff was dry and abandoned at 713 feet.

**Coleman County**

Eastland Oil Co.'s No. 1 Weaver was dry and abandoned at 1,875 feet. Hubert Oil Co. and others' No. 1 Weaver, gas sand 1,802-07 feet, total depth 1,878 feet, initial production 1,250,000 feet of gas. Wesserman and others' No. 1 Godwin had oil show at 904 feet, initial production 8 bbls. oil and 10 bbls. of water, total depth 916 feet. Lloyd Oil Corp.'s No. 9 Bartholomew had oil show at 1,439 feet, total depth 1,452 feet, initial production 215 bbls.

**Eastland County**

Texas Pacific Coal & Oil Co.'s No. 5 Durocher fee, top pay 2,955 feet, total depth 2,970 feet, shot 50 quarts 2,952-70 feet, initial production 30 bbls. Rover Drilling Co.'s No. 1 Chastain heirs, top pay 1,642 feet, total depth 1,643 feet, initial production 2,250,000 feet of gas. The Texas Company-Warner & Quinlan's No. 2 Histon, top pay 3,405 feet, total depth 3,420 feet, initial production 3,000,000 feet of gas. Southern Oil & Petroleum Co. and others' No. 1-A Chesley was dry and abandoned at 3,880 feet.

**Palo Pinto County**

Bennings' No. 1 Hinkson was dry and abandoned at 1,280 feet. Brazos River Oil & Gas Co.'s No. 2 fee, total depth 1,353 feet, gas sand 1,320 feet, initial production 7,000,000 feet of gas. Transcontinental Oil Co.'s No. 1 Dalton was dry and abandoned at 3,035 feet.

**Shackelford County**

Gilman & McMurray's No. 1 Huron, total depth 925 feet, shot 10 quarts at 912-22 feet, initial production 35 bbls. oil. Roeser & Pendleton's No. 1-191 Morris & Buie had oil show at 1,704 feet, total depth 1,767 feet, initial production 12 bbls. Roeser & Pendleton's No. 1-201 Morris & Buie had oil show at 1,600 feet, initial production 122 bbls., total depth 1,621 feet. Schoonmaker's No. 1 Farmer was dry and abandoned at 1,735 feet.

**Stephens County**

Bateman & Co.'s No. 1 Manning was dry and abandoned at 4,053 feet. Lone Star Gas Co.'s No. 1 Elliott had gas sand at 2,102-13 feet, initial production 4,500,000 feet of gas, total depth 2,114 feet. Lone Star Gas Co.'s No. 2 Ellis, total depth 3,759 feet, plugged back to 3,652 feet, shot 100 quarts at 3,590-3,640 feet, initial production 1,500,000 feet of gas. Texas Pacific Coal & Oil Co.'s No. 78 Binney, total depth 1,921 feet, shot 15 quarts 1,903-21 feet, initial production 15 bbls.

### NORTH TEXAS PRODUCTION
**Week Ending May 17**

| Panhandle district— | Bbls. |
|---|---|
| Carson County | 8,655 |
| Hutchinson County | 23,365 |
| Gray County | 71,010 |
| Moore County | 535 |
| Potter County | 11 |
| Wheeler County | 606 |
| Total this week | 104,182 |
| Total last week | 103,498 |
| Increase | 684 |
| Wichita Falls district— | |
| Archer County | 19,480 |
| Baylor County | 1,220 |
| Clay County | 725 |
| Cooke County | 3,850 |
| Foard County | 207 |
| Jack County | 3,810 |
| Haskell County | 40 |
| Motague County | 6,765 |
| Throckmorton County | 1,225 |
| Wilbarger County | 24,097 |
| Young County | 19,500 |
| Wichita County | 25,340 |
| Total this week | 106,315 |
| Total last week | 106,437 |
| Decrease | 122 |
| Ranger district— | |
| Brown County | 6,700 |
| Callahan County | 3,970 |
| Coleman County | 3,800 |
| Comanche County | 380 |
| Palo Pinte County | 646 |
| Eastland County | 5,220 |
| Shackelford County | 6,625 |
| Stephens County | 6,180 |
| Total this week | 33,521 |
| Total last week | 33,863 |
| Decrease | 342 |
| Grand total this week | 244,018 |
| Grand total last week | 243,798 |
| Increase | 220 |

### TEXAS PANHANDLE COMPLETIONS
**Week Ending May 18**

**Carson County**

L. W. Timms' No. 2 Carner, total depth 3,140 feet, plugged back to 3,122 feet, and shot with 180 quarts at 3,050-3,116 feet; initial production 10 bbls. oil and 10,000,000 feet of gas.

**Gray County**

Humble Oil & Refining Co.'s No. 2 Combs & Worley, total depth 2,808 feet;

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### WILDCAT OPERATIONS IN TEXAS PANHANDLE
**Week ending May 19**

**CARSON COUNTY**

| Company, well, farm, name, section and block— | Remarks— |
|---|---|
| Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur. | S.D. 2,985 ft. |
| Danciger O. & R. Co.'s No. 1 Byrum, 990 ft. N, 330 ft. W, SW, Sec. 188, Blk. 3, H.&G.N. Sur. | Drlg. 2,561 ft. |
| Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur. | S.G. 3,000-10 ft.; S.D. 3,131 ft. |
| Cockrell-McIlroy Oil Co.'s No. 1 Eller, 330 ft. S and W, NE cor. NW, Sec. 200, Blk. 3, I.&G.N. Sur. | Drlg. 3,360 ft. |
| Cockrell-McIlroy Oil Co.'s No. 1 Simms, 330 ft. S and E, E 140 ac., N 160 ac., S 320 ac., Sec. 11, Blk. 7, I.&G.N. Sur. | 43,000,000 ft. gas 3,110-35 ft; S.D. 3,160 ft. |
| Empire G. & F. Co.'s No. 1 Archer-B, 330 ft. N and E, SW cor. SW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur. | Location. |
| Empire G. & F. Co.'s No. 2 Fields, 990 ft. N and W, Sec. 13, Blk. 4, I.&G.N. Sur. | Drlg. 1,635 ft. |
| Gibson Oil Corp.'s No. 1 Moore, 990 ft. N, 330 ft. E, N½, SE, Sec. 20, Blk. 7, I.&G.N. Sur. | Spudding. |
| H.A.M. Oil Co.'s No. 1 Cooper, 330 ft. S and W, E½ NE, Sec. 5, Blk. 9, H.&G.N.R.R. Sur. | T.D. 3,105 ft.; 2,000 ft. oil in hole. |
| Humble O. & R. Co.'s No. 2 Combs-Worley, 330 ft. S, 240 ft. E, NW cor. N½ SE, Sec. 36, Blk. 3, I.&G.N. R.R. Sur. | Location. |
| McClintock et al's No. 2 Garner, 330 ft. W and S of E 55 ac. of N 80 ac., NW, Sec. 105, Blk. 4, I.&G.N. R.R. Sur. | Drlg. 2,520 ft. |
| Phillips Pet. Co.'s No. 1-A Garner, 430 ft. S line, 330 ft. W, Sec. 114, Blk. 4, I.&G.N. Sur. | S.D. 3,193 ft; P.B. 2,915 ft; C.O. |
| Phillips Pet. Co.'s No. 1 Pickens, 990 ft. E line, 330 ft. N line, NE cor., Sec. 31, Blk. 7, I.&G.N.R.R. Sur. | Drlg. 1,480 ft. |
| Prairie O. & G. Co.'s No. 2 Nail, 330 ft. N and W lines, N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur. | 10,000,000 ft. gas 2,830-2,985 ft.; S.D. 3,123 ft. |
| Shamrock O. & G. Co.'s No. 1 Thompson, 330 ft. S and W lines, E 80 ac., NE, Sec. 5, Blk. 7, I.&G.N. Sur. | Drlg. 2,620 ft. |
| Shell Pet. Corp.'s No. 1 Percival, 330 ft. N and E, SE, Sec. 199, Blk. 3, I.&G.N. Sur. | T.D. 2,411 ft. |
| Skelly Oil Co.'s No. 19 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur. | 6,000,000 ft. gas 2,895-2,970 ft.; C.O. 3,100 ft. |
| Suloch Oil Co.'s No. 1 Bost, 990 ft. S, 330 ft. E, SW, Sec. 1, Blk. S.&F. | Drlg. 2,045 ft. |
| Sweeney et al's No. 1 Locke, 164 ft. N and W, 40-ac. tr. along R.R. in Sec. 57, Blk. 7, I.&G.N. Sur. | Spudding. |
| Texas Interstate P. L. Co.'s No. 1 Burnett, 1,320 ft. N, 660 ft. W, of W 480 ac., Sec. 99, Blk. 5. I.&G.N. Sur. | Fishing 1,990 ft. |

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# Gulf Coast's Deep Sand Extensions

## Possibilities Are Good in Barbers Hill and Refugio. Wildcat in Cameron Parish, Louisiana, Looks Promising

By Neil Williams
*Staff Correspondent, Gulf Coast Fields*

HOUSTON, Tex., May 19.—The possibility of extensions of deep sand production at both Barbers Hill and Refugio was foremost on the Gulf Coast over the weekend. Deep wildcats and semi-wildcats at these two fields promise developments of importance this week, interest in which, however, probably will be shared by a rank wildcat in southern Cameron Parish due to be tested in a few days. In Terrebonne Parish, Louisiana, a deep oil sand has been encountered in a wildcat on the Bay St. Elaine Dome, one of the seven domes being developed by The Texas Company in that area.

At Barbers Hill, chief interest probably is centered in Humphreys Corp.'s No. 1 Morgan, a deep wildcat on the north side of the dome, which over the weekend had set screen at a total depth of 6,404 feet. Located some 4,000 feet to the northwest around the dome from the deep production on the east side and approximately 1¼ miles from Humphreys Corp.'s No. 8-A Kirby, wildcat producer on the northwest side, this test, if successful not only will open an entirely new area but will prove an important link in tying up the line production around the dome.

Offsetting Humphreys Corp.'s No. 8-A Kirby, the deep wildcat producer on the northwest flank, the same company's No. 1-F Kirby is being watched at this time. This test, which in the same sand at a total depth of 6,487 feet set two joints of 4¾-inch screen at that depth and was brought in flowing at the rate of 1,000 bbls. of 33.5 gravity pipe line oil daily. This well, however, has proved a little disappointing considering the extremely good showing made by the well it offsets, and, after dropping off until it was flowing only by heads, it was killed preparatory to deepening.

### An Unusually Good Well

No. 8-A Kirby, which blew in January 4, 1930, opening an entirely new producing area 2 miles distant across the dome from any other production, has proved one of the best wells ever completed at Barbers Hill. In a sand at 6,397-6,416 feet, it flowed 8,100 bbls. of pipe line oil the first 24 hours, later increasing to as high as 11,000 bbls. daily. In the first month it made 251,353 bbls. Since, however, the well has declined materially and has been making water. Due to a leak in the casing, the well could not be put on small chokes and its failure to make any appreciable water for a long period with such a large flow made it a remarkable one for Barbers Hill.

Another deep wildcat at Barbers Hill, Yount Lee Oil Co.'s No. 1 Zadie Fisher on the southwest side of the dome is being watched closely. It is approximately 1½ miles to the south of Humphreys Corp.'s No. 8-A and No. 1-F Kirby on the northwest flank and about 2,500 feet to the northwest around the dome from the deep production on the south flank. This test late in the week was drilling sticky shale at 6,861 feet.

### Three New Deep Wells

Three deep wells were completed at Barbers Hill during the week. These, however, were in proved territory on the southeast side of the dome. They included Mills Bennett Production Co.'s No. 2 Gulf-Higgins Fee, 600 bbls. at 5,245 feet; F. L. Thompson's No. 3 Wilburn, 1,000 bbls. at 5,103 feet, and McAlbert Oil Co.'s No. 5 Woodward, 1,300 bbls. at 5,245 feet.

At Refugio, Mission Drilling Co.'s No. 1 Moss, Block 110, of the Refugio Townsite, is being watched as an important key to the extent of the new 6,400-6,500-foot sand. In a drill stem test of sand at 6,408-16 feet, this test showed a fourble of oil and two fourbles of mud and fresh water, and now casing has been cemented for a screen test.

So far this deep sand has proved a failure for commercial production. The only well to be completed as a well in it was Union Producing Co.'s No. 1-A Rose Lambert, which flowed initially at the rate of 200 bbls. daily but which failed to maintain this flow and after a short time went to water and then quit entirely. Two other tests drilled to this sand in other parts of the Refugio area found salt water and were abandoned. Mission's No. 1 Moss is some 5,000 feet to the southwest of the Rose Lambert well and closer in to the field. Being in an undrilled strip of territory between the 3,700-foot field just to the west and the string of 5,500-foot wells to the east it occupies a rather strategic position. It tested salt water in the 5,500-foot sand at 5,480-93 feet and was deepened to its present level.

Union Producing Co. as yet has not completed its No. 2 M. F. Lambert, 1,500 feet to the east of No. 1 Lambert, a wildcat 2 miles northeast of the Refugio Field, which discovered production as a 1,700-bbl well in a sand at a total depth of 5,884 feet. Standing from 4,500 to 5,000 in fluid, the No. 2 M. F. Lambert, at a total depth of 5,891 feet, will not flow and may indicate the playing out of production in that direction, although Refugio has been subject to numerous irregularities. It will not be before the completion of Independent Oil & Gas Co.'s No. 1 M. F. Lambert, east offset to Union's No. 2; Houston Oil Co.'s No. 1 Rose Lambert, west offset to Union's No. 1 M. F. Lambert; Union's No. 3 Lambert, 1,000 feet south of No. 1; Houston Oil Co.'s No. 2 Rose Lambert, a west offset to Union's No. 3; and Morgan Oil Corp.'s No. 1 St. Johns, a south offset, that the extent of the 5,900-foot sand will be determined definitely. Also Houston Oil Co. is drilling a wildcat, No. 1 O'Connor, nearly a mile southeast of the Lambert group.

In the 5,500-foot sand string of development, Union Producing Co. got a good well in its No. 3-A O'Brien. This well, in sand at 5,414-37 feet, came in flowing 300 bbls. daily on a quarter-inch choke with 900 pounds pressure. Since completion the well has increased steadily and late in the week was flowing better than 900 bbls. daily. This makes the twelfth 5,500-foot sand well producer to have been completed or the fourteenth deep producer, considering the Lambert 5,900-foot well and the Rose Lambert 6,400-foot well. A 3,700-foot well, Sun Oil Co.'s No. 4 Buckley, also was completed during the week, this flowing 175 bbls. at 3,663-87 feet.

### Louisiana Fields

Vacuum Oil Co. late in the week was setting casing and screen in its No. 1 Cameron Meadows Land Co., Section 21-14s-13w, southern Cameron Parish, preparatory to testing at a total depth of 3,800 feet. For the past two weeks, the test has been setting up a heavier rig capable to pulling stuck drill stem and this has been successfully completed. This test has been one of the most interesting wildcats in view of the succession of sands encountered, 14 sands showing oil having been passed. The test is in an almost virgin portion of the sparsely inhabited marshy lands of the parish. In the event of a failure to make an important discovery well at this depth, the hole will be deepened.

Also of interest from a wildcat standpoint was the finding of a deep oil sand in The Texas Company's No. 4 State-Bay St. Elaine, southern Terrebonne Parish, which late in the week was drilling at 5,198 feet. This is the fourth test drilled on this dome, the first two finding large gas production at 653 feet and 971 feet, respectively, and the third salt at 2,417 feet. The dome is one of the seven discovered by the Louisiana Land & Exploration Co. in the marsh lands and water beds in Terrebonne Parish along the Gulf of Mexico. Oil production has been found on four of these domes, and gas production on Bay St. Elaine.

Cranfill-Reynolds Oil Co. got a 15,000,000-foot gas well in its No. 3 Davis in the Esperson Field, western Liberty County. The gas is from a sand at a total depth of 2,394 feet. The Esperson area, one of the newest fields on the Gulf Coast, now has seven rigs working in a development which already has built up a production of between 3,000 and 3,500 bbls. daily.

Other completions on the coast were of little interest consisting mostly of small wells in proven or semiproven fields. Daily average production for the week ending May 17 totaled 201,720 bbls., which represented only a slight increase over estimates of the preceding week. Daily average production the past week was:

| SOUTHEAST TEXAS | |
|---|---|
| Allen | 37 |
| Barbers Hill | 18,511 |
| Batson | 1,208 |
| Big Creek | 4,273 |
| Blue Ridge | 1,882 |
| Brenham | 150 |
| Boling | 1,156 |
| Clay Creek | 1,605 |
| Damon Mound | 691 |
| DeWalt | 12,167 |
| Fannett | 1,077 |
| Goose Creek | 4,394 |
| Hankamer | 1,271 |
| High Island | 1,521 |
| Hull | 10,454 |
| Humble | 16,296 |
| Jasper County | 20 |
| Lost Lake | 805 |
| Markham | 325 |
| Nash | 278 |
| North Dayton | 540 |
| Orange | 2,262 |
| Orchard | 1,910 |
| Pierce Junction | 9,628 |
| Port Neches | 1,718 |
| Raccoon Bend | 12,061 |
| Refugio | 39,928 |
| Esperson (Sheeks) | 3,122 |
| Saratoga | 1,044 |
| Sour Lake | 2,485 |
| South Liberty | 4,375 |
| Spindletop | 16,475 |
| West Columbia | 5,795 |
| Total Southeast Texas | 179,394 |
| Week ending May 10 | 177,556 |
| Increase | 1,838 |

| SOUTH LOUISIANA | |
|---|---|
| Anse La Butte | 37 |
| Bayou Blue | 46 |
| Bayou Bouillon | 36 |
| Black Bayou | 35 |
| Edgerly | 518 |
| Jennings | 826 |
| Hackberry | 3,411 |
| Lake Barre | 879 |
| Lake Pelto | 201 |
| Lockport | 2,958 |
| Port Barre | 2,104 |
| Sorrento | 239 |
| Starks | 452 |
| Sulphur | 5,889 |
| Sweet Lake | 105 |
| Vinton | 4,037 |
| Welsh | 180 |
| White Castle | 373 |
| Total South Louisiana | 22,326 |
| Total week ending May 10 | 22,532 |
| Decrease | 206 |
| Total Gulf Coast | 201,720 |
| Week ending May 10 | 200,088 |
| Increase | 1,632 |

## GULF COAST FIELDS AND WILDCATS

Week Ended May 17

**BARBERS HILL—CHAMBERS COUNTY**

| | |
|---|---|
| Mills Bennett Production Co.'s No. 7 Barrow, southwest | Drlg. sand showing oil 4,748 ft. |
| Mills Bennett Production Co.'s No. 4 Wilburn, southeast | Fishing 5,205 ft. |
| Mills Bennett Production Co.'s No. 2 Gulf fee, southeast | Comp. flowing 600 bbls. pipe line oil 5,245 ft. |
| Mills Bennett Production Co.'s No. 1 Gulf-Fisher, south | Drlg. shale 2,888 ft. |
| Mills Bennett Production Co.'s No. 2 Wilburn (workover) | Pulling screen to deepen 5,159 ft. |
| Fell & Thornton's No. 1 McLain | Rigging up to pump 2,140 ft. |
| Gulf Production Co.'s No. 3 Wilburn southeast | Total depth 4,955 ft.; cmtd. csg. 4,950 ft. |
| Gulf Production Co.'s No. 4 Wilburn, southeast | Total depth 5,037 ft.; cmtd. csg. 5,022 ft. |
| Humhreys Corp.'s No. 1-F Barber, northwest | Comp. flowing 1,000 bbls. daily 6,487 ft.; dropped off and now killed to deepen. |
| Humphreys Corp.'s No. 9-A Kirby, northwest | Location. |
| Humphrey's Corp.'s No. 2-C Kirby (workover) | Shale and lime 3,940 ft.; fishing. |
| Humphreys Corp.'s No. 1 Morgan | Set screen 6,404 ft. |
| Humphreys Corp.'s No. 3 Scott | Drlg. hard sand and lime 5,847 ft. |
| Humphreys Corp.'s No. 1 C. Barber (workover) | To pump 5,240 ft. |
| Humphreys Corp.'s No. 2-H Kirby (workover) | Shut down waiting orders 5,312 ft. |
| Humphreys Corp.'s No. 3-H Kirby (workover) | Drlg. shale 5,507 ft. |
| Sinclair Oil & Gas Co.'s No. 3 McKinney fee | Tested salt water 5,344 ft. |
| Sinclair Oil & Gas Co.'s No. 4 McKinney Fee, southeast | Derrick. |
| Sinclair Oil & Gas Co.'s No. 7 Wilburn, southeast | Reaming to bottom 4,589 ft. |
| Sun Oil Co.'s No. 5 Wilburn fee, southeast | Drlg. sand and shale 5,435 ft. |
| Sun Oil Co.'s No. 6 Wilburn fee, southeast | Rigging up to pump 5,263 ft. |
| Sun Oil Co.'s No. 5 J. Wilburn, southeast | Drlg. lime 4,875 ft. |
| Sun Oil Co.'s No. 6 J. Wilburn, southeast | Drlg. shale 5,218 ft. |
| Sun Oil Co.'s No. 5 Chambers, south | Rig. |
| The Texas Company's No. 4 Wilburn | Location. |
| F. L. Thompson's No. 2 Wilburn, southeast | Set 120 ft. screen 5,190 ft.; swabbing. |
| F. L. Thompson's No. 3 Wilburn, southeast | Comp. flowing 1,000 bbls. oil 5,103 ft. |
| Yount Lee Oil Co.'s No. 14 Chambers, south | Drlg. sand 4,942 ft. |
| Yount Lee Oil Co.'s No. 3 Phillips, southeast | Oil sand and shale 5,206 ft. |
| Yount Lee Oil Co.'s No. 7 Woodward, southeast | Drlg. hard lime 4,996 ft. |
| Yount Lee Oil Co.'s No. 1 Zadie Fisher, southeast | Drlg. sticky shale 6,861 ft. |

**RACCOON BEND—AUSTIN COUNTY**

| | |
|---|---|
| Humble & Valley's No. 5 Bellville | Derrick. |
| Humble & Valley's No. 1 Brown | Location. |
| Humble & Valley's No. 3 Buchanan | Derrick. |
| Humble & Valley's No. 2 Diemar | Comp. flowing 600 bbls., ¾-in. choke, 3,427 ft. |
| Humble & Valley's No. 5-B Grawunder | Comp. pumping 199 bbls. oil 3,250 ft. |
| Humble & Valley's No. 1-B Hardy (Waller County) | Drlg. hard sandy shale 3,562 ft. |

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# Pipe Line Construction News

## Columbia Contracts For Gas Supply From New York's New Field

BRADFORD, Pa., May 17.—The Columbia Gas & Electric Corp. has contracted to take all gas produced by the Belmont Quadrangle Drilling Co. of this city, according to information received here last night.

It has definitely been established that the Columbia Gas & Electric and at least one subsidiary company are financing the drilling of Schuyler County, New York, in which Dundee, the scene of all the new gas boom, is located. These or their proxies have secured leases on nearly all likely territory between Keuka and Seneca Lakes in the gas boom district.

Columbia Gas & Electric has purchased from Attorney George G. Reynolds of Elmira the gas franchises in Dundee, Watkins, Montour Falls and Millport. Near Jacksonville, Trumansburg and Ulysses, between Seneca and Cayuga Lakes, options have been secured on thousands of acres by the Union Carbide & Carbon Co.. This company manufactures gas stoves, using condensed natural gas for fuel. Small tanks of this can be purchased which will last one stove several months.

In recent years the Columbia corporation has extended its lines to the center of the country. By a policy of buying up old pipe lines, it now has a continuous connection from the center to the Atlantic Seaboard. The trunk line which runs near Bradford carries its gas from

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## PLAN TO PIPE NATURAL GAS TO PHILADELPHIA

NEW YORK, May 19.—Conversations between the Columbia Gas & Electric Corp. and the United Gas Improvement Co. for the delivery of substantial quantities of natural gas from western Pennsylvania and West Virginia to Philadelphia and surrounding sections of Pennsylvania and New Jersey are nearing completion, it was reported in Wall Street yesterday.

Accompanying the reports were rumors that the United Corp., the Morgan-Drexel-Bonbright utility holding company, might add to its holdings in the Columbia system, in which it held 245,263 common shares on April 12. The United Corp.'s offer for additional United Gas Improvement common shares expired on Monday, and has given the former company holdings of 24 per cent of the common stock of U. G. I. United Corp. holdings in Columbia amount to only 2.9 per cent of the common stock.

It was learned that no United Corp. offer for Columbia Gas & Electric shares has been arranged yet, despite stock market rumors that one share of common and four-fifths of a share of preference stock of United Corp. would be exchanged for each share of Columbia common stock.

While a United Corp. offer for Columbia shares lies within the realm of possibility, the New York Times says, it is expected that the former company at most would seek only a larger interest in the company and not control, in view of the policy of United Corp. to hold only substantial minorities in large eastern utility companies.

The Columbia Gas & Electric Corp. is the oldest and largest natural gas company in the United States, with a network of natural gas pipe lines extending more than 27,300 miles from near Muncie, Ind., to the outskirts of Jersey City and Philadelphia, and from Toledo and Cleve-

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## LET AMARILLO-CHICAGO CONTRACT ABOUT JUNE 15

Contracts for the 24-inch natural gas line from Amarillo, Tex., to Chicago will be awarded about June 15. The line will be constructed for the Continental Construction Corp. of Delaware. This company is composed of the Cities Service Gas Co., Insull Co., Standard Oil Co. (New Jersey), and the Central States Natural Gas Co. The latter company is composed of Phillips Petroleum Co., Skelly Oil Co., Columbia Carbon Co., and The Texas Corporation.

It is proposed at this time to construct the first 500 miles of the line which extends from Amarillo, Tex., to Plattsmouth, Neb. The remaining 500 miles from Plattsburg, Neb., to Chicago, will be let at a later date, along with the lateral lines supplying towns along the main line and quite an extensive gathering system near Amarillo. E. V. Kesinger, on the sixth floor of the Professional Building, Eleventh and Grand, Kansas City, Mo., with his associates, R. G. Strong and S. E. Campbell, will supervise this construction. Specifications will be available in Mr. Kesinger's office in Kansas City, June 1, bids must be returned to that office June 10. The contract will be awarded about June 15. This line will be constructed in five 100-mile sections or one 500-mile section.

The first pipe that will be received is National 24-inch seamless, five-sixteenths-inch wall, weighing approximately 80 pounds per foot, ultimate strength 62,000 pounds, carbon content .25 to .35, minimum lengths 18 feet, maximum lengths 30 feet, average lengths 27 feet. This pipe will be furnished about June 15 and is expected to be shipped at the rate of 2 miles per day, and there may be some Smith pipe furnished. It will be a welded and coupled line with 60-foot minimum and 120-foot maximum distances between couplings. The line will be solid welded across all rough breaks. There will be no factory bends furnished. The ditch will be 32"x60" and one gang will be required for each 50-mile section. In the proposal contractors will be asked to bid on electric as well as acetylene welding. There has been no decision made on the pipe coating and no definite plans have been made for crossing rivers. It will be either by bridge or submerged multiple lines. There is no objection to subletting the welding and stringing. There will be no penalty or bonus clause and no specified time to complete this contract. The line will be operated at 800 pounds gas working pressure on completion. Approximately 250 miles of right of way have been secured and in all probability the right of way problem will be solved by June 15, as there are 20 men securing right of way at the present time.

### OMAHA BIDS MAY 23

Natural gas companies will file bids on May 23 to supply Omaha, Neb., with gas. Prospective bidders are Missouri-Kansas Gas Corp., Missouri Valley Gas Co., Oklahoma Natural Gas Corp., El Paso Natural Gas Co. and the Central States Natural Gas Co., the latter being composed of a group of companies interested in the 24-inch gas line to be constructed from Amarillo, Tex., to Chicago.

### NEW PASO-TEX PIPE LINE

FORT WORTH, Tex., May 19.—The Paso-Tex Pipe Line Co. is now surveying for an 8-inch line from Winkler County to the Texas Pacific Coal & Oil Co.'s producers in Section 21-23s-36e, Lea County, New Mexico, the line to be about 33 miles long, and the fourth line proposed for this area.

## PIPE COATING TESTS TO BEGIN ON JUNE 16

WASHINGTON, D. C., May 19.—Sixteen pipe line companies will co-operate with the Bureau of Standards in furnishing samples for testing soil corrosion. The list made up by Dr. Gordon N. Scott embraces the Atlantic, Empire, Gulf, Oklahoma, Humble, Prairie, Shell, Sinclair, Standard, Sun, Tidal and Union pipe lines companies, the northern group of pipe lines, the Prairie Oil Co., the Shell Oil Co. and the Standard Oil Co. of California. The pipe submitted by these companies will be buried in Texas, Oklahoma, Kansas, Indiana, California, Illinois, Louisiana and Pennsylvania.

Nineteen different coatings involving asphalt, coal tar and greases will be applied to the operating lines. This work, it is anticipated, will commence on June 16, the first application being made on the property of the Illinois Pipe Line Co. at Mount Auburn, Ill., the second on the property of the Oklahoma Pipe Line Co. near Muskogee, Okla., and the third on the property of the Tidal Pipe Line Co. near Oklahoma City.

These schedules are tentative pending the completion of the preparations for the coatings which are to be applied to short nipples. Forty-six different coatings will be applied to nipples which will be buried at all of the 16 sites selected as indicated. The work of applying the coatings to the nipples probably will start on Monday, May 26, at the Galvanizing plant of the National Tube Co. at Versailles, Pa., under the direct supervision of the manufacturers. Visitors will not be allowed to be present while the work of coating the nipples is taking place. Only those manufacturers directly concerned will be permitted in the plant. However, it is expected that applications of the coatings to the main or operating lines will be open to pipe line operators interested in the tests.

## CERTIFICATE GRANTED FOR IDAHO GAS LINE

DENVER, Colo., May 19.—The joint application of John McFadyen, vice president of the Ohio Oil Co. and L. B. Denning, president of the Lone Star Gas Co., for a certificate of convenience and necessity for the construction of a natural gas line in that State, has been granted by the Idaho Public Utilities Commission. Both officials are connected with the Western Public Service Co., which operates the natural gas system that transports gas from Wyoming and Colorado into central Utah and which proposes to extend this system on into Idaho this summer. The Public Utilities Consolidated Corp., which owns the distributing system in Pocatello, has filed a petition with the commission asking for a rehearing of the case. It sets forth that the franchise was granted to the applicants without any showing on their part as to their financial ability to carry out the project. The Western Public Service Corp.'s showing that it was financially able to continue its line on northward from Ogden, Utah, was attacked on the ground that no connection between that company and the applicants was set up. The petitioners for a rehearing also set up that the commission made no provision for the protection of existing investments or made no order to compel the applicants to recognize existing rights. George W. Edington, counsel for the Grand Teton Oil Co., which is carrying on development work on the Horseshoe structure in Idaho, also is filing a similar petition.

## SOUTHERN NATURAL GAS PLACES BIG PIPE ORDER

Orders for pipe involving the expenditure of approximately $3,750,000 have been awarded the National Tube Co. and the A. O. Smith Corp. by the Southern Natural Gas Corp. The National Tube, a subsidiary of the United States Steel Corp., was given approximately $2,375,000, while the A. O. Smith Corp. was given an award of about $1,000,000. Announcement to this effect was made by J. H. White, president of the Southern Natural Gas Corp.

Additions to the pipe bought at this time will be made very soon, which will involve further expenditures. Shipments of the pipe will begin at once, to be used on the extensions of the Southern Natural Gas Corp. transmission system, which will involve a total expenditure of about $15,000,000 this summer.

Simultaneously with the announcement of the award for the steel pipe, it was also made known that work has begun on the transmission line extensions to carry natural gas into Mobile, Selma, Montgomery, Auburn and Opelika in Alabama; Macon, Milledgeville and Griffin in Georgia, and Jackson, Biloxi, Pascagoula, Laurel, Hattiesburg, Moss Point in Mississippi, and perhaps other points in the three states traversed by the transmission lines of the Southern Natural Gas Corp.

The pipe order to the National Tube Co. is one of the largest to be given this year by natural gas companies. Added to pipe already bought, this award brings the cost of pipe for natural gas extensions of the Southern Natural up to approximately $11,750,000. Consignments of the pipe will be shipped to strategic points along the right of way of the natural gas line for distribution by truck over the mountains, valleys and plains of three southern states, there to be buried in the ground as conveyors of a natural fuel to scores of cities and towns, where gas consumers are impatiently awaiting the availability of the natural gas from the Monroe-Richland Fields.

The official statement of President J. H. White, of the Southern Natural Gas Corp., says:

"Work has begun on our heretofore announced extensions and natural gas will be available for the cities enumerated during the early part of October."

## REPUBLIC STEEL CORP. TO START NEW PIPE MILL

CLEVELAND, Ohio, May 19.—Large scale production of electric welded pipe will be started by the Republic Steel Corp. at its new pipe mill at Youngstown, Ohio, within the next few weeks, it was announced by Tom M. Girdler, chairman of the board of the company. Completion of the mill is being rushed and all of the important equipment is in place with the exception of two large machines which are expected to be installed by the end of the current month.

Inquiries for the company's pipe to be produced under the Johnston patents, controlled by the Republic Steel Corp., have been extremely heavy according to Chairman Girdler and large bookings are assured as soon as delivery dates can be definitely fixed. The large present stimulation in demand for pipe is coming partly from the phenomenal development taking place in the construction of natural gas pipe lines.

With the completion of the new production unit, Republic will have two mills for the making of small pipe from to 2 to 8 inches in diameter, and one mill for the making of pipe from 8 to 16 inches. The total capacity of the mills will approximate 30,000 tons monthly.

*The third of a series of advertisements by the Oklahoma Contracting Company showing the history and the development of the pipe line industry*

# THE TEAMSTERS FOUGHT THE BATTLE OF THE PIPE LINES IN PITHOLE CITY

**A traveler in Pithole County, Pa.—the scene of America's first oil boom—could journey a whole day without seeing either the beginning or the end of the wagon train. Six thousand wagons, each carrying from five to seven barrels of oil, constantly plied the roads between Pithole City and barges on Oil Creek.**

**Oil at the well sold for ten cents a barrel. The drivers of the wagons, realizing that they were the most important link in the economic chain of oil production, named and got their own prices for hauling it from the field. At a cost of three dollars or more per barrel for transportation, the operators saw that within a short time it would become uneconomic to develop the field.**

**Then out of the mire of the oil field, there arose the oil industry's greatest benefactor. Samuel Van Syckle believed that oil, like water, could be pumped through pipes. In 1865, he laid a two-inch pipe from Pithole City to Miller's Farm, a distance of four miles.**

**The teamsters, their livelihood threatened, protested. Collecting tanks were burned. Wells were fired. The pipe line was cut. Men on the job of laying the lines were attacked and beaten. Finally the militia was called out to protect the men who were working on this first pipe line.**

**Today the 156,000 miles of trunk pipe lines in use in the United States evidence the fact that no one man nor many can stay the hand of progress. Throughout the South and West, the Oklahoma Contracting Company has laid many of the pipe lines that bring the power of the oil and gas fields to the industries of the world.**

*On the St. Louis-Monroe 22" Gas Line*

***Making history in modern pipe line construction....***

On the Interstate Gas Company's line from the Panhandle to Denver, 86.7 miles of 22-inch Dresser coupling pipe was laid in 80 working days by the Oklahoma Contracting Company. This line was tested to 400 pounds gas pressure with no leaks.

On the Shell McCamey main line to St. Louis 99 miles of 10-inch welded pipe went into operation 60 working days from the time the Oklahoma Contracting Company's gangs broke the first ground.

Transportation is still the most important link in the economic chain of oil production. The Oklahoma Contracting Company's past record of achievement is their guarantee of a good line on the contract specified time.

## OKLAHOMA CONTRACTING COMPANY

**PIPE LINE ENGINEERS AND CONTRACTORS**

General Offices: 1205 Allen Bldg., Dallas, Texas • Branch Office: Oklahoma Gas Bldg., Tulsa, Okla.

# President Lederer Reviews the Year

## Tells Natural Gasoline Association Industry Has Maintained Very Fortunate Equilibrium. Stocks Should Remain on Sound Level

By Dr. E. R. Lederer
President, Natural Gasoline Association of America*

It is my privilege and pleasure to welcome you to the ninth annual convention of the Natural Gasoline Association of America.

We can review the past year with a feeling of satisfaction, which honest and conscientious service and work always leaves with us.

Realizing that our industry can survive and take its proper place in the realm of industrial life only if it is placed on a scientific and efficient base, a group of farsighted members of our association prevailed in June, 1926, on the board of directors to appoint an Educational Committee. Its duty was to familiarize the buyers of our product and the public in general with the intrinsic value and qualities of natural gasoline and propagate its usefulness.

This work under the skillful direction of Dr. G. G. Brown of the University of Ann Arbor, Mich., developed into a scope of real magnitude and its results are, today, common knowledge of everybody connected with or interested in the manufacture of motor fuel. To undertake and carry out such a scientific program over four years, involving a cash expenditure of $70,000, besides the sacrifice of valuable time on the part of a good many member companies, is a true indication of the splendid spirit pervading this association.

Doctor Brown has presented to you in his interesting and illuminating manner during the last three annual conventions the progress of his work. We are happy to present to you and to the entire natural gasoline and refinery industry, during this year's convention, a book containing the summary of all this work. We owe an expression of gratitude to Doctor Brown and also to the University of Michigan, which co-operated with us in issuing this book, which will be a welcome and very useful addition to every technical library and of immense value to all those interested in the manufacture of natural and refined gasoline and motor fuels.

The Educational Committee, with G. G. Oberfell as chairman, in co-operation with Doctor Brown, is conducting at present, an investigation of aviation fuels with particular reference to vapor-lock.

Several member companies, Phillips Petroleum, Empire Oil & Refining, Skelly Oil and Shell Petroleum, have volunteered the services of their airplanes, pilots and technologists, have equipped their ships with special instruments and a series of specified tests are carried out now with different types of motors, motor fuels, and under varying conditions. It will be some time before dependable results will be obtained, which can be summarized and published, but we can expect some very interesting and beneficial information from this work.

The changes in compression ratio, the tendency towards high speed motors, new types of airplane engines, require different motor fuels than we used to produce.

Governmental agencies insisted on new specifications, standardizing the various types of motor fuels offered on the market, for their purchasing agencies. The manufacturers of motor fuels had to get together in self defense and discuss such new specifications with the Government's technologists or see their industries burdened with specifications which might cause economic losses in operation.

Possibly this exigency helped us accomplish, during the past year, one of our aims—that of closer personal contact and co-operation with the refiners.

### New Specifications

The Natural Gasoline Association anticipated the need for new motor fuel specifications. We knew that the last revision of July, 1928, was only a temporary expedient, more a guide for the sales manager or buyer to go by, than for the technologist, who blends gasoline scientifically for use as motor fuel.

As early as February, 1929, the Specifications Committee referred to the Technical Committee the problem of revision of volatility specifications for the standard grades of natural gasoline. This problem was referred to a subcommittee with G. M. Davidson of the Empire Oil & Refining Co. as chairman, and R. C. Alden of Phillips Petroleum Co., R. E. Baker of Shell Petroleum Corp. and R. L. Gallagher of Sinclair Oil & Gas Co. as active members.

These men did some real work; they gathered in the laboratory of the Phillips Petroleum Co. at Burbank, for weeks at a time, neglecting their individual work for their employers, until they were satisfied and had all the proofs that the new proposed specifications were the ones our industry needed and the refiners could go by to intelligently blend both products together and produce the motor fuel of tomorrow.

They submitted to your board of directors on August 1, 1929, a "Proposed Revision of Natural Gasoline Specifications," which represents a mass of scientific data, new revelations in the investigation of volatility and vapor pressure, and which I consider a masterpiece, regardless of a few objections to some of these specifications by some of our members and refinery technologists, which we respect and consider and hope to smooth out, in time, so we can adopt these new specifications unanimously and present them to our own and to the refining industry.

We discussed these new specifications at a joint meeting of some of our members and of prominent refinery technologists during the American Petroleum Institute's meeting in Chicago last December. We wanted to learn directly from these men, representing the largest buyers of our products, their requirements as to the quality of our product.

Again we met with our friends at the manufacturers committee meeting of the Western Petroleum Refiners Association in Shreveport in March. S. S. Smith very capably presented and discussed the problem of proper specifications, and Emby Kaye treated the outage problem and the best manner of handling and shipping natural gasoline. I am sure the close contact gained during these discussions will foster a better understanding of our mutual problems.

### Relations With Refiners

We are most anxious to continue the friendly relations and good understanding with our customers. We realize that the refiner is our natural customer and the customer has to be pleased. In these days of close margins, when frequently 1 cent per gallon means the change from "black" to "red" figures and vice versa, only full co-operation between manufacturer and customer, mutual confidence and fair play can keep both of our industries going.

We do not want the refiner to consider our product as a necessary evil, which is forced on him by some burdensome specifications, and of which he wants to use only the absolute necessary minimum. Not at all! We endeavor and hope to convince him that our product, selected as to the necessary characteristics, and blended in the correct proportion with his gasoline, will produce the best possible motor fuel he can offer the public and will be more profitable for him in the long run.

### Work of Committees

Association work is carried on almost altogether through committees. The Gas Contract Committee, with T. R. Goebel as chairman, worked diligently during the past year preparing a model gas purchase contract form and filling a long felt need. The Gas Testing Committee completed its co-operation work with the Bureau of Standards in developing specifications and a method of procedure for our new specific gravity balance. Our association defrayed the cost of this work by the Bureau of Standards and we hope this accurate new instrument will be of good assistance to the producers and buyers of natural gas and casinghead gas.

This same committee with George P. Bunn as chairman, has also achieved the adoption of the Reid vapor pressure method, now used by the industry and recognized by the American Society of Testing Material. We are also assured that the Interstate Commerce Commission will make this method mandatory in its transportation regulations, effective September 1, 1930. The same committee has also been studying our joint code with the American Gas Association and is preparing to make recommendations for its improvement.

Emby Kaye as chairman of the Outage Committee has again been untiring in his efforts to create a better understanding of the volatile character of our product and to promulgate a more thorough knowledge of the technique of loading

*Annual convention Natural Gasoline Association of America, Tulsa, May 20-22.

# INSTITUTE DIRECTORS APPROVE 1930-31 PROGRAM OF RESEARCH

NEW YORK, May 19.—Twenty projects of fundamental research in petroleum geology, physics and chemistry have been approved by the directors of the American Petroleum Institute to make up the 1930-31 research program.

This period represents the last year of a five-year research program carried out under the auspices of the institute and financed by two contributions of $250,000 each from Mr. John D. Rockefeller and the Universal Oil Products Co. of Chicago.

The combined fund is being spent at the rate of $100,000 a year to support fellowships at various educational institutions and government laboratories. The results that have been obtained up to the present time are contained in many articles that have appeared in various technical journals; also the results each year have been summarized in the institute bulletin.

The list below gives the title and directors of the various projects for next year:

### Fundamental Research Program
### July 1, 1930—June 30, 1931

1. Generation of Oil in Rocks by Shearing Pressures. Director: Prof. Warren J. Mead, University of Wisconsin, Madison, Wis.

2. Action of Oxygen (and Air) on Cyclopentane and Cyclohexane Hydrocarbons with Side Chains. Director: Dr. Georges Chavanne, University of Brussels, Brussels, Belgium.

3. Studies of Source Rocks in the Micro-Furnace. Director: Dr. David White, United States Geological Survey, Washington, D. C.

4. Origin and Environment of Source Sediments Present in Petroleum. Director and Research Associate: Parker D. Trask, Princeton University, Princeton, N. J.

6. The Separation, Identification and Determination of the Chemical Constituents of Commercial Petroleum Fractions. Director: Dr. E. W. Washburn, Bureau of Standards, Washington, D. C.

7. Catalytic Methods Applied to Petroleum Hydrocarbons. Director: Dr. Hugh S. Taylor, Princeton University, Princeton, N. J.

8. The Effect of Electrical Discharge Upon Gaseous Hydrocarbons. Director: Dr. Samuel C. Lind, University of Minnesota, Minneapolis, Minn.

18. Noncatalytic Therman Decomposition of Pure Hydrocarbons and Related Compounds. Director: Dr. Charles D. Hurd, Northwestern University, Evanston, Ill.

19. A Study of the Relative Rates of Reaction of the Olefins. Director and Research Associate: Dr. Harold S. Davis, Massachusetts Institute of Technology, Cambridge, Mass.

20. Isolation of Investigation of Nitrogen Compounds Present in Petroleum. Director: Dr. J. R. Bailey, University of Texas, Austin, Tex.

23. Limestones and Dolomites as Reservoir Rocks. Director: Dr. A. H. Daniels, University of Illinois, Urbana, Ill.

25. Determination of Geothermal Gradients in Oil Fields on Anticlinal Structure. Part A.—Oklahoma. Director: Dr. C. N. Gould, University of Oklahoma, Norman, Okla. Part B.—Texas. Director: Dr. F. B. Plummer, University of Texas, Austin, Tex. Part C.—California. Director: Prof. Lester C. Uren, University of California, Berkeley, Calif.

28. A Study of the Reactions of a Number of Selected Organic Sulphur Compounds. Director: Dr. E. Emmet Reid, Johns Hopkins University, Baltimore, Md.

29. An Investigation of the Heat Capacities and Free Energies of Some Typical Hydrocarbon Comopnuds. Director: Dr. George S. Parks, Stanford University, Stanford University, Calif.

32. The Equation of State of Certain Easily Liquefiable Hydrocarbons. Director: Dr. Jean Timmermans, University of Brussels, Brussels, Belgium.

36. The Fundamentals of the Retention of Oil by Sand. Measurements on the Mobility of Suspensions of Rotating Electric Fields. Director: Dr. Robert A. Millikan, California Institute of Technology, Pasadena, Calif.

37. The Fundamentals of the Retention of Oil by Sand. Fundamental Factors in Removal of Petroleum from the Sands. Director: Dr. Robert A. Millikan, California Institute of Technology, Pasadena, Calif.

38. Thermodynamic Properties of Petroleum Hydrocarbons. Directors: Dr. C. S. Cragoe and Dr. H. C. Dickinson, Bureau of Standards, Washington, D. C.

40. Specific Absorbents for Sulphur Compounds in Petroleum. Director: Dr. H. S. Taylor, Princeton University, Princeton, N. J.

41. The Preparation and Properties of Thiophanes. Director: Dr. R. W. Bost, University of North Carolina, Chapel Hill, N. C.

and unloading natural gasoline. His papers and discussions at the American Petroleum Institute's and Western Petroleum Association's meetings were greatly appreciated. To further this good cause he has written a number of very interesting articles in trade papers and personally interviewed quite a number of refiners and blenders. No doubt his efforts should result in minimizing losses at the loading rack and reduce the frequency of unfair, unjust and costly outage claims at the unloading end.

The Plant Operators Meeting took place at Ranger on April 22. F. G. Yonker (Chestnut & Smith Corp.) and Dean Hiatt (Texas Pacific Coal & Oil Co.) were in charge of arrangements, ably assisted by Otto Peters (Chestnut & Smith Corp.). It was a very successful, well attended affair and this committee, working far distant from headquarters, deserves our appreciation.

The newly appointed Publicity Committee kept our association, our aims and our product before the public eye through articles, either directly written or inspired.

Many of our member companies were well represented at the Gas Measurement course at Norman, Okla., of which Dan A. Sillers was chairman.

**Review of Year's Operations**

I know it is expected of the president of this association to review in his address, the economic condition of the industry.

The past year was characterized by curtailment and prorating of production —partly voluntary, partly forced by governmental authorities. Some of our members with large plants, representing considerable investment, in such prorated districts have suffered, it is true. But, I believe, the entire industry welcomes and approves such restrictive steps as long as they are systematic, reasonable and fair. Without these, reckless overproduction by individuals, only concerned with possible momentary profits, might create, at least, temporary chaotic conditions with prices below cost of production for everybody.

Our industry has maintained a very fortunate equilibrium. We produced in 1929 2,195,400,000 gallons compared with 1,777,700,000 in 1928, or 28 per cent more than in 1928.

California, especially Santa Fe Springs and Greater Seminole furnished this increase. In 1930 we may expect Oklahoma City, West Texas and New Mexico flush pools to furnish the increase.

Fortunately for our industry this increase of 417,000,000 gallons was practically absorbed by refineries and export business, and our stocks remained almost even. In 1929 gasoline demand increased 13 per cent over 1928; gasoline production (of which natural gasoline represents about 12 per cent) increased 17 per cent.

Petroleum economists estimate the consumption for 1930 as follows: Gasoline 1,107,000 bbls. or 46,494,000 gallons daily; natural gasoline 143,000 bbls. or 6,006,000 gallons daily, representing 12.92 per cent of the total gasoline demand.

According to Bureau of Mines figures for the first quarter of 1930, the daily production of natural gasoline averages 6,180,000 gallons, which figures would indicate that stocks must have increased slightly, but not alarmingly.

Unless an unexpected flood of natural gasoline breaks in on us, which cannot be taken care of by increased refinery or export demand during the summer season, our stocks should remain on a sound level also this year.

**Price Situation**

Average prices for our products were the lowest in 1929 since 1927. We did not quite reach the lowest figures of 1927, but the highest price we got for our grades in 1929 did not reach the high figures of 1927.

We might as well face the facts that low gasoline prices mean low prices for our products. In my opinion, it is a wonderful and reassuring proof of the sturdiness and vitality of this, our industry, that when confronted with such adverse conditions, we all took the bit between the teeth, increased the efficiency of our plants, cut the overhead all possible, lowered our costs of production, made better products, and utilized our by-products and created new diversified markets for all our products.

Although the outlook for 1930 is none too rosy, ours is a healthy industry and we will survive in spite of overproduction and low prices and most of us, I sincerely hope all of us, will show again profits when the balance sheet for 1930 is made up.

## TEAGLE ANALYZES INDUSTRY'S PROGRESS

(Continued from Page 49)

sions made to new producing areas were a line 126 miles long to the Salt Flat Field in Texas and a line 50 miles long to the Oklahoma City Pool in Oklahoma.

The character of the business of the Tuscarora Oil Co., Ltd., was changed from that of a crude carrier to that of a gasoline carrier, and the pumping system reversed from an eastward to a westward movement. The pipe line is approximately 370 miles long, running from Bayway, N. J., across the State of New Jersey to the western boundary of Pennsylvania.

Overproduction of crude and manufactured products played an important part in the transition from a surplus to a shortage in world tanker tonnage. In addition to expansion of domestic consumption and in exports, there were heavier requirements for movement of clean products to the Eastern Seaboard as well as a larger volume of movement for greater distances. The resultant tonnage shortage brought all world tankers available for commercial service into operation by the middle of the year. As a consequence, market freight rates remained practically fixed at the high levels reached at that time. Earnings were substantially greater under the new rates, which average 60 per cent higher than those prevailing during the previous year.

At the close of the year world tanker tonnage afloat aggregated 10,650,000 deadweight tons. An additional 15 per cent, or 1,670,000 tons, under contract for construction, is almost four times that building at the close of 1928. It is reasonable to expect that the present high level of rates will continue until curtailment of production or manufacture reduces requirements or until delivery of tonnage now building creates a surplus.

The 118 tankers owned by subsidiaries and aggregating in excess of 1,250,000 deadweight tons constitute an increase of 17 in number and more than 200,000 deadweight tons as compared with the close of 1928. Completion of tankers now under construction, consisting of two 19,000-ton high-pressure steam-driven vessels, six 16,000-ton Diesel vessels and smaller ships being built for special trades, will give the Standard Oil Co. (New Jersey) ownership of more than one-tenth of the world tanker tonnage afloat.

An increase of 13 per cent is indicated by the total bulk oil movement of 164,394,084 bbls. transported in tonnage owned and chartered. Of this, 111,422,694 bbls. were transported in the average of 71 vessels owned and chartered by the Standard Shipping Co.

Absence of serious accidents during the year kept losses substantially under the premiums set up against the marine insurance reserve on the basis of outside market rates.

**Crude Runs**

Total crude run by all refineries was 196,797,000 bbls., an increase of about 15,000,000 bbls. over 1928. Average daily throughput of crude at the domestic plants was 409,098 bbls. as compared with 394,924 bbls. in 1928. The statistics of this year include for the first time the operation of the Beacon Oil Co.'s refinery at Everett, Mass. In the refineries operated in Canada, Cuba, Argentina, Chile, Roumania, Dutch East Indies, Norway, Poland, Italy, Peru, Venezuela, Trinidad and England 130,072 bbls. were run daily as against 102,162 bbls. in the preceding year.

It is obviously essential that the refiner manufacture his products at lowest cost as well as in the proportions and of the quality required by the trade. This demands constant ability to meet the changing requirements for products — especially motor fuels and lubricants— brought about by engineering advances in other industries, as well as to overcome the difficulties of operating on a frequently changing quality of raw material. Through continued research and development, resulting in equipment of improved engineering design, we were able during the past year not only to improve the efficiency but also to keep pace with this essential need of flexibility in refinery operations.

A very substantial improvement was effected in the antiknock quality of the gasolines produced in response to the increasing demand for motor fuels suitable for internal combustion engines of higher compression ratios.

Further attention was given to the comprehensive planning and co-ordination of activities which resulted in a greater degree of uniformity in refinery operations and consequently a minimum disturbance to personnel. It also permitted the continuance of the policy of holding inventories at a minimum with a resultant economy in overhead charges. No increase in stocks was made by the refineries, notwithstanding the larger business handled and the fact that inventories were at the minimum at the beginning of the year due to the large reductions accomplished in previous years.

**Uneconomic Competition**

During 1929 the overproduction of crude and manufactured products throughout the industry glutted the markets, bringing about price cuts and other uneconomic conditions. In spite of this the domestic companies generally retained their customers and secured a fair share of the increase in consumption.

The practice of some competitors when entering a new field of encouraging tank car buyers with particularly favored prices so they may in turn grant concessions is detrimental and disturbing to sound marketing. It secures a temporary benefit for the company encouraging the tank car buyer at the sacrifice of sound marketing conditions and provides a permanent sales evil. The gross profit thus assured the tank car buyers is out of proportion to that of the refiner. It is at least as much, and often more, than the refiner gets for his gasoline at seaboard shipping points and yet bears no comparison to the investment of the refinery nor to the hazards involved in producing and transporting crude, manufacturing finished products and transporting them to seaboard distributing points.

The code of marketing ethics approved by the Federal Trade Commission and put into operation September 1, 1929, has tended to eliminate many unsound marketing practices and its wider adoption by all engaged in marketing petroleum products is in the public interest.

Conditions in foreign markets were similar to those in 1928. The company's business expanded at a satisfactory rate and in keeping with the increase in consumption in these markets. The sale of antiknock motor fuel, Esso, was inaugurated in foreign countries and indications are that there will be a considerable demand for it. The sale of motor oil directly to consumers has likewise made progress.

**Natural Gas**

The past year saw further expansion in the distribution of natural gas over the country and the subsidiaries participated in the developments which have followed the opening up of additional natural gas resources.

Deliveries of gas through the lines of the Interstate Natural Gas Co. in Louisiana reached capacity and it became necessary to undertake a program of paralleling the 22-inch line from Monroe to Baton Rouge for one-half of its length with a duplicate line. This program increases the daily capacity to 140,000,000 feet. A like condition was anticipated for the winter demands of the Denver market upon the capacity of the 22-inch pipe line of the Colorado Interstate Gas Co. and an additional compressing station was constructed and put into operation at Canyon, Colo.

On November 21, gas was delivered to the first industrial consumer in St. Louis, Mo., by the Mississippi River Fuel Corp., marking the completion in record time of the 22-inch pipe line, 510 miles in length, from the gas fields of northern Louisiana to the St. Louis industrial area.

Subsidiaries are producing and selling gas to other companies which have recently completed pipe lines; one to Memphis, one to Shreveport and one to Birmingham-Atlanta, and this is developing into business of large volume.

In Ohio, West Virginia and Pennsylvania sales of gas promised to greatly exceed the record of 1928, but the decline in demand by industrial consumers in the last three months of the year considerably reduced the expected margin. These subsidiaries in the older districts supplied 656,443 domestic consumers in over 200 cities and towns with an estimated population of more than 3,500,000. The amount of gas marketed was again in excess of 100,000,000,000 feet, which was partly purchased from other producers and partly produced from the territory owned, consisting of 2,838,337 acres under lease, with 6,472 gas wells. These companies operate 15,446 miles of pipe lines, 2,966 oil wells and 30 gasoline plants. During the year the Hope Natural Gas Co. acquired all of the properties of the Clarksburg Light & Heat Co., thereby effecting economy of management and operation.

**Export Corporation**

Organized under the laws of Delaware on November 26, 1928, the Standard Oil Export Corp. was qualified as an exporting entity on January 1, 1929. All of the stock is owned by four subsidiaries of the Standard Oil Co. (New Jersey), and it controls and directs the export business of these subsidiaries. The Standard Oil Export Corp. recently acquired, through an exchange of its nonvoting 5 per cent cumulative preferred shares, about 94 per cent of the stock of the Anglo-American Oil Co., which in the past has been a large purchaser of the petroleum commodities now handled through the Export corporation. Steps are now being taken under the English Companies Act to acquiring the remaining 6 per cent. An issue of $75,000,000 of 5 per cent preferred stock of the Standard Oil Export Corp. was listed on the New York and London Stock Exchanges in February of this year. The exchange of stock through which the Anglo-American Oil Co., Ltd., was acquired was effected on a basis of 5 5/9 shares of that stock for one share of Export corporation. Prior to the transaction, Anglo-American Oil Co., Ltd., was engaged solely in marketing petroleum products. Its acquisition will have the effect of assuring the Export corporation an outlet for its export cargoes in the British Isles and at the same time will guarantee the Anglo-American Oil Co., Ltd., a source of supply.

**Technical Development**

The technical unit of Standard Oil Co. (New Jersey) is the largest organization of engineers, chemists and technical specialists in the petroleum industry. It maintains and operates the development department, including the central research laboratory at Bayway, N. J., general engineering department, Standard Inspection Laboratory, production research and the patent department. It also finances and directs, to varying degrees, major research and development projects, the actual conduct of which is in the hands of the operating subsidiaries of the company, and through a standing technical committee, together with various special committees, it provides machinery for co-ordinating technical and related activities which the various operating units carry on.

In 1929 there was an expansion of 42 per cent in the activities of this unit. This was in large part made necessary by intensive experiments on the hydrogenation process, the remainder being due to the general increase of research, de-

velopment and engineering work of the company. In research and development the principal activities have revolved around the increasing demand for improved products. Engineering activities have been expanded mainly by the necessity of designing improved and more efficient equipment, coupled with moderate increase of capacity in several existing refineries and by the planning of some projected new plants.

**Hydrogenation**

In November, 1929, the Standard Oil Co. (New Jersey) and the I. G. Farbenindustries A. G. entered into a contract replacing the development contract of 1927 and providing for a definite and permanent merger of interests in the hydrogenation development. Acting under the 1927 agreement, the Standard Oil Co. (New Jersey) and the Standard Oil Co. of Louisiana had already begun construction of pioneer oil hydrogenation plants at the Bayway and Baton Rouge refineries, and a third unit for the Humble Oil & Refining Co.'s Baytown refinery is in process of design.

By the terms of the new contract, patent rights, present and future, or Standard Oil Co. of New Jersey and I. G. Farbenindustrie A. G. relating to hydrogenation of coal and oil for the world outside of Germany were assigned to a newly created Delaware corporation, the Standard-I. G. Co. Standard Oil Co. (New Jersey) owns the majority of the stock of the Standard-I. G. Co. In order to make the hydrogenation process generally available to the oil industry within the United States, there will be incorporated a patent holding company to which will be assigned the exclusive licensing rights for the process. Any unit of the industry desiring a license will be offered an option to purchase a stock interest in the patent holding company proportional to its crude refining capacity, thereby mutualizing for the industry the license rights and management of the patent holding company.

Construction of commercial plants and preparation for the early operation and general licensing of the hydrogenation process are a reflection of the success which has attended the research and development work in progress for several years. The demonstrated potentialities of hydrogenation as a refining and conversion operation will have a far-reaching effect upon the petroleum industry. This effect may be summarized as follows:

**Effect on Oil Industry**

1. Through hydrogenation it is now shown to be practicable to convert coal into liquid hydrocarbons at a cost, which, although above prevailing oil prices, is not prohibitive. Thus, the coal reserves of the world become supplemental to the crude oil reserves.

2. By the hydrogenation method, liquefied coal, shale oil, coal tars, crude petroleum and its residues of all descriptions may be converted into substantially 100 per cent of high-grade finished products. Thus, product quality as well as supply will be stabilized for an indefinite future and conservation promoted by making unnecessary the production of low-grade products and by reducing refining losses.

3. The hydrogenation technique is adaptable to supplementing as well as replacing to a considerable extent present refinery methods, and is in general characterized by the production of products of higher quality than those obtainable by present methods from ordinary crudes. This should result in a healthy and permanent expansion of markets.

Because of the innumerable new technical problems, solutions of which are required for the practical and profitable use of the hydrogenation method in the oil industry, and because of the relatively large investments required, progress toward its general application will probably be slower than was the case with the cracking development. The ultimate effect, however, should be even more important.

It is believed that the perfection of the hydrogenation process will place the oil industry upon a plane of stability comparable with the other basic industries and that the general recognition of that fact will result in the acceptance of oil fuel as an enduring source of energy by the engineering and industrial world.

**Specifications**

Formation of the Stanavo Specification Board, Inc., in conjunction with representatives of the Standard Oil Co. of California and Standard Oil Co. of Indiana was the outstanding step in the company's aviation program during 1929. This agency served the two-fold purpose of affording a channel for the marketing of uniform specification aviation products under one brand name both here and abroad, and of building good will by making available to the flying world the technical experience of all three companies. Continued research and experiments, both on the ground and in the air, resulted in many new specialty products as well as steadily improving quality in existing aviation fuels and lubricants. Company planes flew 106,400 miles last year, including a 6,000-mile tour of 50 European airports.

**Conditions Abroad**

Europe is still experiencing a period of gradual reconstruction and in 1929 some further progress was made in its economic readjustment. The monetary stabilization became further consolidated and, with the exception of the Spanish peseta, no marked fluctuations occurred in the various currencies. The financial improvement has been an important factor in enabling trade to develop progressively, not only from an internal agricultural and manufacturing standpoint, but also in the way of assistance to European exports.

This improvement in economic conditions has had a direct bearing upon the development of the petroleum business, which, however, continued to partake of a highly competitive character and in some countries was handicapped in its normal development through political interference and government restrictions.

The expansion and growth of the gasoline business in Europe would be much more rapid were it not for the heavy import duty and direct taxation levied on petroleum products, gasoline in some countries being subjected to a fiscal burden varying anywhere from 9 cents to over 16 cents per gallon. With such taxes, gasoline is still more or less a luxury and enters into popular use on no such scale as exists in the United States.

Reports from Russia do not seem to indicate any prospects of improvement in the generally disorganized conditions prevailing throughout that country.

**Stock Ownership**

The trend toward the diffusion of ownership of the Standard Oil Co. (New Jersey) among an increasing number of investors has been particularly marked during the past year. The popular concept of a business operated for the gain of a small group has changed, since its affairs are now a matter of concern to over 104,000 individuals who jointly share in the proprietorship of its assets. The company is not a closed corporation, the profits of which accrue to a few, but a publicly owned enterprise, the interests of which are identical with the interests of a large section of the community. The individual holdings of 81 per cent of the stockholders are less than 100 shares. Of the total number of stockholders almost 36,000 are women.

Through the stock acquisition plan the trustees have distributed 1,309,116 shares of common stock to employes. The third plan has been in operation one year and on December 31, 1929, had approximately 23,500 subscribers for whose accounts the trustees held 120,000 shares. Over 63 per cent of the shares already distributed were still retained by employes on February 15, 1930. This partnership has been of great value in developing a spirit of loyalty and co-operation throughout the organization.

**Conclusions**

After three years of effort to relieve itself of the incubus of overproduction the industry found itself at the close of 1929 with record stocks in storage. Operators in a number of producing areas have adopted a wise course in their voluntary curtailment of output and a situation that might have had disastrous consequences was kept measurably in hand. The industry has not made progress to the extent of bringing about an actual reduction of stocks but in its spasmodic attempts to gain that goal it has at least prevented more excessive production than actually occurred.

An event of this year which marked a new phase and which afforded a basis for optimism was the report of the Committee on Petroleum Economics, issued under the authority of the Federal Oil Conservation Board. For the first time a program that may lead to a solution of the overproduction problem has been crystallized in definite form by a government appointed body. On account of the painstaking care evidenced in its preparation and the logic of its deductions, the report deserves the serious consideration of the entire industry. Whether or not the program suggested becomes effective, the fact remains that the industry has now before it a workable schedule under which production may be brought in balance with the market demand.

The recommendation of the committee that existing stocks of crude be drawn upon at the rate of 78,000 bbls. daily and that stocks of gasoline be reduced is significant in that this policy is a direct reversal of the industry's practice of annually increasing its stocks of crude and products. The report also suggests an allocation of daily production requirements as between the larger producing states, adjusted so as to relate to the last nine months of this year. California and Oklahoma have made serious efforts to effect conservation and are producing approximately the amount of their allocations. The production in Texas is considerably in excess.

The degree of prosperity experienced by the industry has been demonstrated to tend in inverse ratio to the amounts of surplus crude and products it carries from year to year. The extent to which both producers and refiners recognize that not volume of product, but the ability to measure production to fit the requirements of the consuming markets as these requirements arise, will determine the future of the industry.

**Earnings of Company**

Earnings of the company for 1929 and its percentage of the earnings of affilated companies, including interest on investments, were $120,912,794, or 10.2 per cent, on the net assets of $1,184,697,419. Earnings on the capital stock outstanding at the end of 1929 were $4.75 per share, compared with $4.43 per share in 1928.

During the past year 934,749 shares of the capital stock were issued in the acquisition of stocks, rights and properties, increasing the number of shares of stock of $25 par value to a total of 25,418,968 shares outstanding at the end of the year. The book value of the assets thus acquired in excess of the par value of the stock is approximately $32,000,000, which amount is included in surplus adjustments for the period.

## DIESEL OUTFIT USED IN DRILLING OIL WELL

(Continued from Page 48)

connection with the Standard's experiment with the Diesel electric drive outfit is the apparent efficiency and flexibility of operation over previous attempts along this line. A few years ago the Shell utilized Diesel equipment in the Brea Olinda Field of Los Angeles Basin as the prime mover in drilling No. 2-A Puente from the grass roots down to 5,825 feet. This installation consisted of one 4-cylinder, 150-horsepower Atlas Imperial Diesel drilling engine driving through mechanical transmission and one 3-cylinder, 110-horsepower Atlas Diesel engine driving the mud pumps. No other power was used on the rig. This 4-cylinder engine, developing 150 horsepower, weighed 28,000 pounds, as compared with the Standard's 6-cylinder installation which develops 200 horsepower and weighs only 9,500 pounds. No reliable figures are available as to comparative drilling costs or efficiency of operation so far as the Standard's present experiment is concerned as the well using this equipment is still in the drilling stage. A check on the Shell's work at Brea Olinda indicates, however, that the fuel consumption of the Diesel equipment was far less than that used in steam drilling in the same area.

**Designed for Deep Drilling**

The Diesel electric outfit being tested by the Standard was designed principally for use in foreign fields and on wildcats where water is scarce or of a poor quality. Very little water is required for the engines and the water used for drilling the hole, which would be the same as with any other rotary outfit, does not have to be of any special quality. One of the most significant features in connection with this new equipment is that it was designed for work down to 10,000 feet. This makes it especially adaptable to Kettleman Hills and other areas where production is developed at extreme depths. Some of the principal advantages of a direct current outfit are: (1) More flexible control, since these motors act similar to steam engines and slow down under loads; (2) high torque at low speeds; (3) high efficiency under all loads even with very low speeds; and (4) smooth acceleration. In fact the whole outfit acts very similar to steam as far as flexibility is concerned and is in addition much more efficient.

The tremendous amount of natural gas available in California will probably have a tendency to retard universal use of Diesel equipment as a prime mover for the present, although it is quite possible that if the Standard's Diesel electric experiment proves to be a mechanical and economic success it may become an important factor sooner than anticipated. There has been a very marked tendency on the part of progressive operators during the past year or so to employ electrical energy in drilling and production activities because of flexibility and ease of operation. The Standard and other operators used electricity quite extensively in drilling operations at Kettleman Hills and many similar installations have been made in other fields as well. The Union Oil Co., for instance, is at present drilling No. 1 Del Rey, a new well in the Playa Del Rey Field of the Los Angeles Basin, together with a number of additional wells in other fields where electrical energy can be used to advantage. The Associated, General Petroleum, Shell, Richfield, Chanslor-Canfield Midway Oil Co. and The Texas Company have also utilized electricity in drilling and production activities.

## INDUSTRIAL LIBRARIANS WILL HOLD CONVENTION

SAN FRANCISCO, Calif., May 17.—Members of the Commercial-Technical group of the national Special Libraries Association, composed of the librarians of the leading public utility, transportation, advertising and industrial libraries, are planning an interesting program of activities for the twenty-second annual convention of that organization, to be held in San Francisco, June 18 to 21. For the most part the general sessions of the convention will deal with the progress of the West, industrially and culturally, with leading western industrial engineers and civic figures as speakers.

Foremost in the Commercial-Technical group meeting will be the consideration of "tools of the trade," a discussion of the standard reference guides which have been revised and brought up to date, and a pooling of information on new reference aids published during the past year. Other subjects upon which the group will lay particular emphasis are the indexing of trade publications not indexed elsewhere, and making of bibliographies.

Plans of the group meeting are in the hands of Miss Alma C. Mitchell, Public Service Corp. of New Jersey. She is being assisted in arrangements by Miss Mary Alexander, Batten, Barton, Durstine & Osborn; Mrs. Louise Dorn, Detroit Edison Co.; Miss Marion C. Manley, business branch, Newark Public Library, and Miss Josephine Greenwood, New York Consolidated Gas Co.

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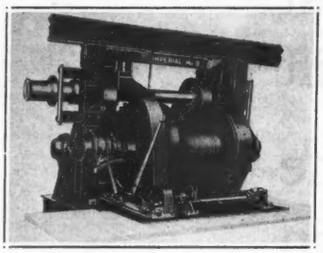
# EQUIPMENT AND SUPPLIES

## IMPERIAL NO. 9 HOIST HAS TWO NEW FEATURES

The outstanding feature of the new two-post, three-shaft, four-speed Imperial No. 9 rotary hoist, manufactured by the Oil Well Supply Co., Oil City, Pa., is the one-piece balance drum. This drum is mounted on a 9-inch alloy steel drum



shaft and provides for smooth rotation, reduced vibration and consequent longer life of the hoist.

The grooved drum is 26 inches in diameter and 34 inches long, the increased diameter substantially reducing the wear while the grooved construction gives better support to the wire line. The drum is grooved for 1-in or 1⅛-inch line, as specified. In addition, the construction of the one-piece balance drum makes possible the replacement of brake flanges in the field and the removal of the shaft from the drum on the derrick floor.

Another outstanding feature is a dual type of braking mechanism, providing the correct braking power for either shallow or deep wells. With this feature either a single or a double toggle mechanism can be used by changing levers. The entire braking mechanism, including the floor plate, is self-contained. No fitting or cutting is necessary when installing the brake. The brake is also self-energizing, that is, the friction between the lining and the flange is increased due to the tendency of the lining to creep in the direction of rotation of the flange.

Owing to the construction of the braking mechanism the arc of contact between the lining and the flange is increased to 315 degrees, giving approximately 20 per cent more braking surface than the average construction. The flanges are of rolled steel, 50 inches in diameter by 10½ inches wide. A black brake can be furnished in the place of the conventional floor type by a substitution of all braking apparatus, including the brake bands.

The hoist frame is entirely of structural steel, making the structure rigid and stiff. Structural steel shapes and plates are riveted and welded for additional strength; heavy tubular reinforcing spacers are welded at the bolt holes between the flanges of the uprights; machined catline rollers are mounted in substantial brackets, bolted to the two uprights. All bolt holes in the frame are drilled from jigs, making assembly of the hoist simply a matter of lining up the bolt holes.

Throughout the entire hoist, American self-aligning roller bearings reduce friction to a minimum. Bearings are alemite lubricated and guarded against intrusion of dirt. Bearing housings on the jack shaft and line shaft are interchangeable. Line and jack shafts are each 8 inches in diameter. All shafts can be completely stripped of sprockets, clutches, drum and collars on the derrick floor.

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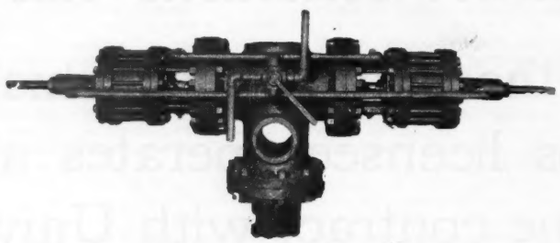
**Hercules Powder Co. reports for the first quarter net profits of $731,535, equivalent to 88 cents per share on 603,079 no par common shares. It compares to a net of $939,046 for the same period last year.**

## STEAM FROM BOILER OPERATES BLOWOUT PREVENTER

The steam-operated blowout preventer made by the Cameron Iron Works, Houston, Tex., is designed to prevent just the kind of accident that drew wide attention to the Oklahoma City Field the early part of last month. Remote control and instantaneous closing are the chief protection against the danger of a blowout provided by the steam-operated blowout preventer.

As the name implies, the device is closed by steam from the boiler. A special four-way valve which allows steam to enter the chambers and drive the rams shut is located at a safe and easily accessible distance from the well. This allows the men to close the preventer without going near the derrick floor. It also closes the rams around the drill stem with great speed. As an added precaution the rams are also closed by 4-foot closing wheels which are extended 14 feet from the well by means of socket wrenches. Air or any other pressure may be used if steam is not available.



The actual holding of the drill stem is accomplished by the double-ram principle. Two steel rams take a vise-like grip on the drill stem, thus building a wall of solid steel completely around it. The steel of the rams comes into actual contact with the drill stem. Further to assure that the drill stem will stay in the hole, the top and bottom of the rams are machined to give a flat surface against which the couplings or tool joints may butt and through which they cannot pass. The action of these rams is much like that of a vise with concave surfaces, the same size as a piece of pipe that is held securely in it.

The rams are packed with a special hydraulic rubber packing so designed and laid that the pack becomes tighter as the pressure increases. The entire preventer is cast of toughest steel, the main body being cast in one piece. The steam chambers in which the ram screws are held are bolted securely to the main body.

Every steam-operated blowout preventer is tested before leaving the plant and guaranteed to withstand 3,000 pounds pressure per square inch. The preventers are mounted by means of a flange to the last string of casing, and are obtainable in sizes from 6⅝ inches to 16 inches, depending upon the outside diameter of the casing.

The manually operated blowout preventer is identical in working principle and design. Instead of being closed by steam the steel rams are locked around the drill stem by means of huge closing wheels which are extended away from the derrick floor. These wheels are connected to the ram screws by means of universal joints. A recent improvement on both these preventers is the addition of alemite lubrication of the rams.

## MURRAY TOOL & SUPPLY HAS NEW PLANE IN SERVICE

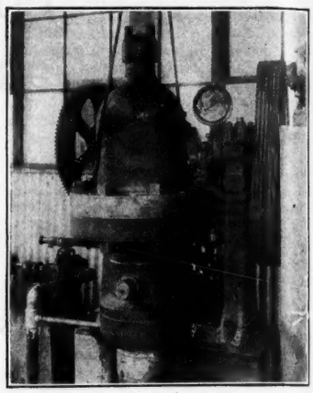
The Murray Tool and Supply Co., Cleveland, Okla., has purchased a four-place Cessna cabin monoplane. It has found the use of airplane service successful in conducting its business over the entire Mid-Continent oil development area. Not only is the ship a convenient means of contact for executives of the company with its various branches, but in emergencies it has served to facilitate the delivery of urgently needed equipment.

The new ship replaces an open job which carried the Murray emblem for many months. The pilot is Lee Hausinger, formerly of the Curtis-Wright flying service. Mr. Hausinger has had over 2,000 hours in the air without having an accident. During the bathing beauty revue in Galveston, Tex., in 1927, when Mr. Hausinger was taking his sister over the parade the landing gear became loose, and he climbed over the fuselage and secured it with a rope, while his sister, an aviatrix, piloted the plane. Mr. Hausinger has piloted Murray planes 50,000 miles.

Claude M. Murray, vice president of the Murray Tool and Supply Co., and James Murray, president, are staunch believers in commercial aviation.

## BAASH-ROSS INSTALLS EQUIPMENT FOR TESTS

Recent developments at Santa Fe Springs and other fields have led to the necessity for providing equipment to control gas pressures far in excess of previous requirements. Recognizing this necessity, the Baash-Ross Tool Co., Los Angeles, Calif., has installed a special testing machine with which hydrostatic pressures up to 9,000 pounds may be applied to blowout preventers, packing heads, control fittings, and other equipment designed for high pressure service.



The testing set-up includes a motor-driven Worthington piston pump, capable of building up any required pressure up to 9,000 pounds; and a small motor-driven centrifugal pump for supplying the water or oil used as the pressure medium. A gauge accurately calibrated to 10,000 pounds indicates the pressure developed.

The illustration shows a Baash-Ross tubing head set-up for testing, the gauge indicating 7,000 pounds pressure, which is maintained for a sufficient time to reveal any flaws in the metal, thread imperfections, or other weaknesses which might result in failure under emergency demands.

## TRADE LITERATURE RECEIVED

**The Chicago Pump Co., Chicago, has issued a catalog which, designated as Pump Guide No. 12, is a useful pump handbook for the consulting engineer, plant engineer, plant superintendent or contractor. It features "Vibrestor" hose connections and sub-base and the "Shokarestor," all designed to make the pneumatic installation more quiet.**

**The International Nickel Co., New York, has sent out the first number of its new publication, Nickel Cast Iron News, devoted to articles and news items relating to nickel cast iron.**

**Pictures showing many uses of the tractor in oil fields appear in the current number of the Caterpillar Magazine, published by the Caterpillar Tractor Co., San Leandro, Calif.**

**How oxwelded piping was used by a gas company in extensive plant additions is told in an article, "In the Gas Works," in the April number of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York.**

**Arthur G. McKee & Co., engineers and contractors of Cleveland, Ohio, have issued an interesting booklet, in colors, showing the character of the work done by this organization. Many illustrations accompany the text. The company gives special attention to its petroleum division.**

# Moore PITMAN...

## *AS GOOD AS THE CHAMPION DERRICK*

**Here is a strong pitman—of structural steel, reinforced, electrically welded. The continuously lubricated bearing is self-aligning and easily operated. It has a quick opening and closing mechanism and convenient adjustment for bearing wear. Moore pitmans are punched for A. P. I. stirrups unless otherwise specified. Standard lengths, from eleven to fourteen feet. The longer sizes may be shortened in the field quite readily, as punching for all lengths is provided at the factory. . . . The walking beam shown is the Moore D. W. Series, with removable babbitted bearing.**

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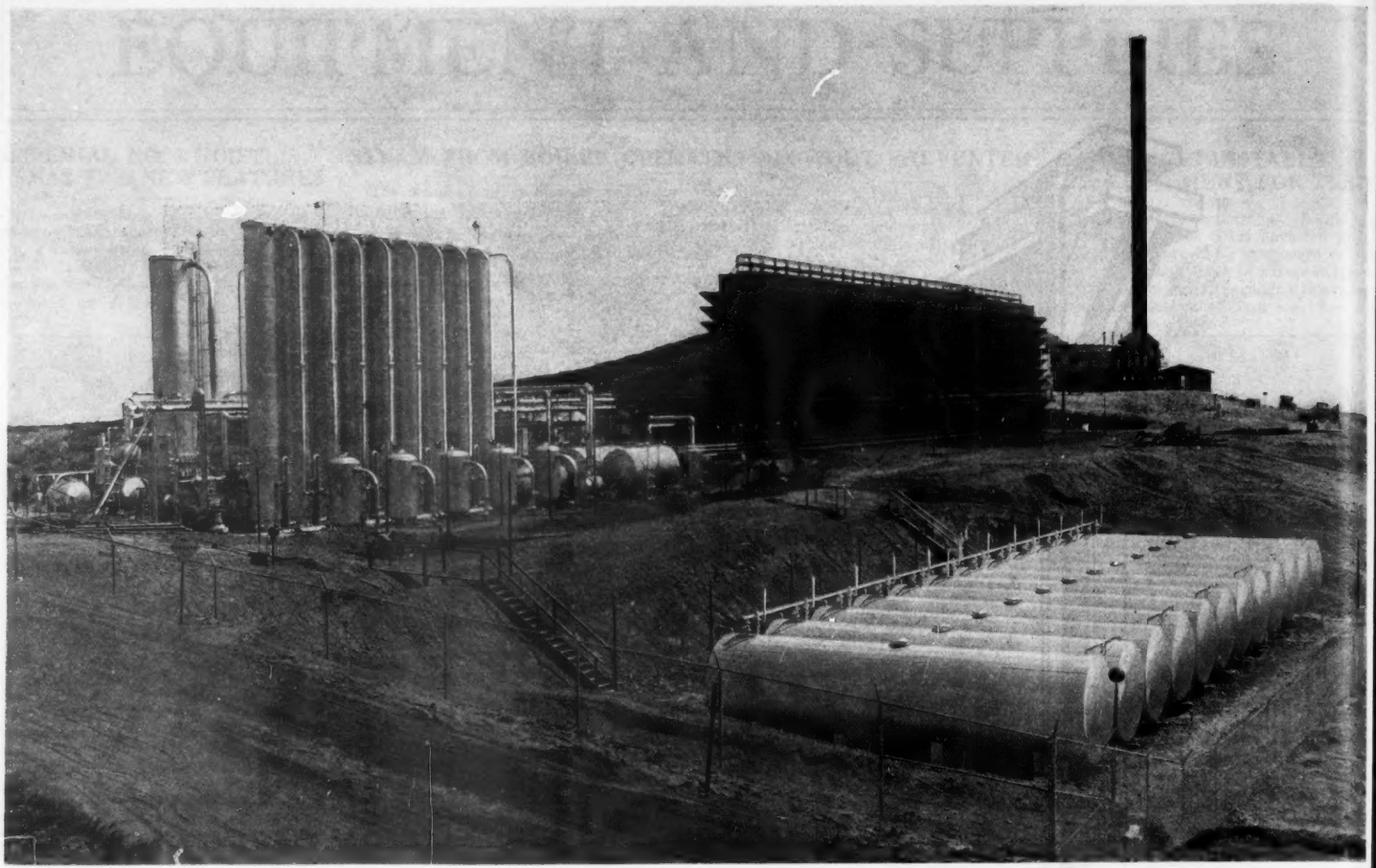
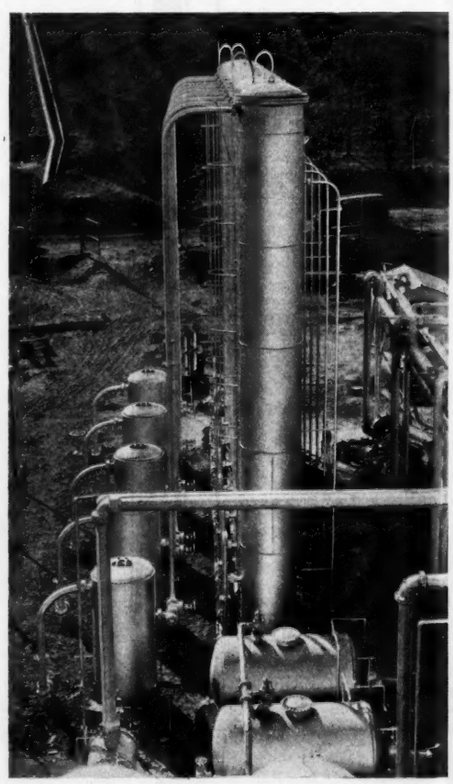
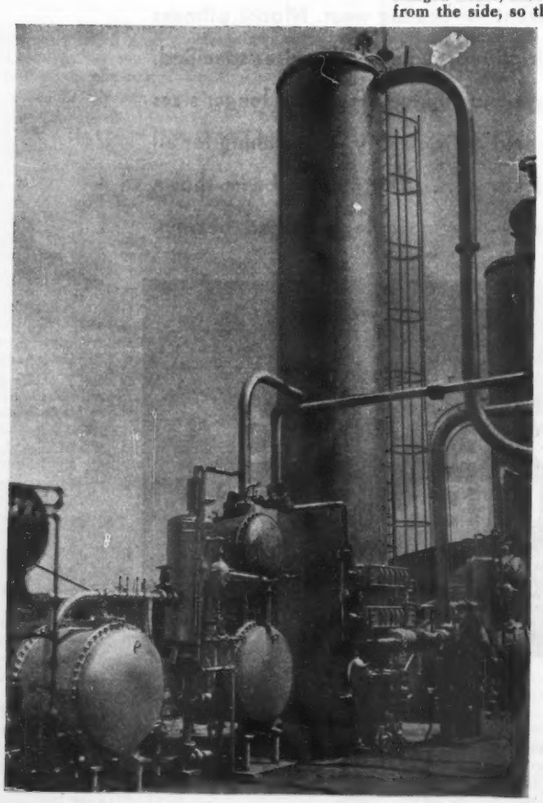


General view of Foster Wheeler natural gasoline absorption plant. The Foster Wheeler louver type cooling tower is shown in the center with the H.R.T. boiler plant at the right. The boilers are fitted with Foster Wheeler superheaters and water-walls.

*(Right)* Non-absorbers with scrubbers at the left and fat oil storage tanks in the foreground. The absorption towers have flanged heads, sectionalized bubble trays and vapor connections from the side, so that top may be removed and trays taken out.





*(Left)* Fractionating unit, showing internal heater coils which give practically the same temperature to lean oil leaving the still as the fat oil entering the still.

Center aisle thru the plant, showing symmetrical arrangement and ample provision for accessibility to all of the equipment. Stabilizer tower is shown in the right foreground. Main oil and water pumps of the centrifugal type are driven by steam turbines operating at 150-lb. pressure and 125 deg. F. superheat.

# 100,000,000 Cu. Ft. per Day High Pressure Gasoline Absorption Plant

The Foster Wheeler natural gasoline absorption plant here illustrated, consists of a boiler plant, cooling tower, storage tanks, a 75,000 gal. per day stabilizer and two units, each having a capacity of 50 million cu. ft. of gas per day.

The first unit was completed in 39 days from date of contract—the second unit 26 days later, including delays caused by rain and snow. The plant was running smoothly within three hours after starting oil circulation. This is the shortest time in which any plant of this size has been built.

Since starting up the plant has been continuously producing gasoline at 87.5 deg. A.P.I. gravity and giving an Engler recovery of 96.5 per cent.

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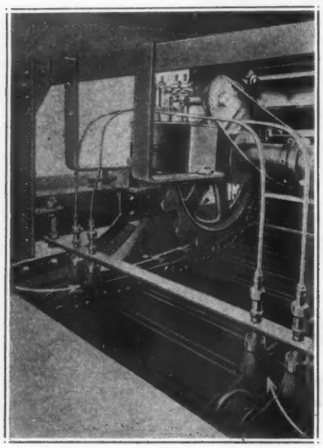
FOSTER WHEELER

# EQUIPMENT AND SUPPLIES

## FORCE-FEED LUBRICATOR SOLVES OILING PROBLEM

Here is an interesting adaptation of a Hills-McCanna force-feed lubricator to a difficult oiling problem. The photograph shows how a large company assures positive lubrication of a heavy-duty apron conveyor used for carrying filled and empty drums.

The lubricator is mounted on the under or slack side of the conveyor. Oil is forced, by the pump, through one-fourth inch O.D. copper tubing to the brushes shown. As each link in the chain passes



*Hills-McCanna 4-feed force-feed lubricator on apron conveyor system.*

beneath the brushes it is coated with a film of oil. The Hills-McCanna lubricator used on this installation is a four-feed unit driven by a sprocket and chain from one of the main drive shafts.

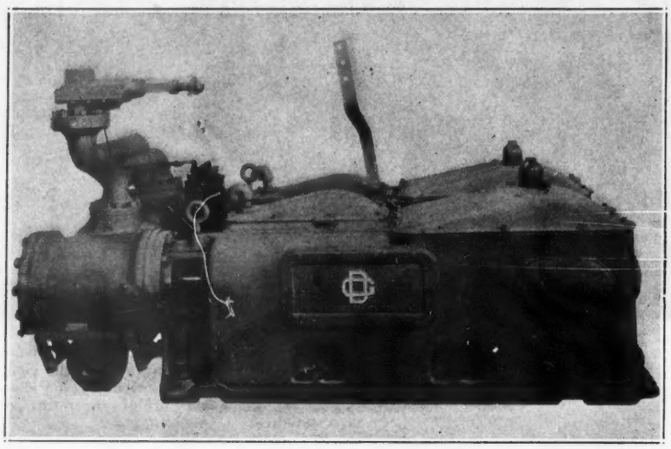
This is only one of many applications of Hills-McCanna force-feed lubricators in supplying positive lubrication. Units are built in several sizes ranging from pint capacity single-feed units for use on small equipment pumps and the like, to large units having as many as 60 feeds. These units may also be mounted in tandem fashion, operated by a central driving unit, thereby increasing the number of feeds to any desired quantity. These larger units permit lubrication of several related machines at regular intervals with predetermined amounts of oil. The device is made by the Hills-McCanna Co., Chicago.

## WALWORTH OFFICE IN HOUSTON

The Walworth Co., Boston, Mass., has established new sales offices in Houston, Tex., under the management of W. C. Goza, formerly manager of the company's western division sales with headquarters in Kewanee, Ill. This move, according to the company, is a step toward improvement of service to oil producers, refiners and pipe line companies in the Southwest. Mr. Goza has handled all of the company's business in oil fields of that part of the country for years. The work of making quotations, handling orders and correspondence about business in the oil country will continue to be done in Kewanee under Mr. Goza's direction. Charles W. Watson succeeds Mr. Goza as sales manager of the western division and will handle sales in that part of the country outside of the Texas and Oklahoma oil fields. Mr. Watson's offices will be at 231 South LaSalle Street, Chicago. Quotations, orders and routine correspondence with customers will continue to be handled in Kewanee under Mr. Watson's direction.

## TWIN ROTARY DRILLING ENGINE HAS NOVEL FEATURES

The Gardner-Denver Co., Quincy, Ill., has announced a newly developed twin drilling engine that incorporates novel features in design and construction. It is the type DEB 12x12 twin roller-bearing rotary drilling engine, designed to operate with 350 pounds steam pressure. The dimensions are: length 9 feet, one-half inch; width, 6 feet, 5 inches; height of engine proper, 3 feet 11⅝ inches, and overall height 4 feet 7¾ inches. The weight installed is 14,000 pounds. A type of construction has been used that makes the engine as light and compact as possible for the high steam pressure of 350 pounds.



All moving parts, cranks, valve rods, eccentrics and valve links are totally enclosed in a dirtproof case of strong semi-steel. Access to the interior is provided by large, dustproof covers on top, and hand holes inside. The base is cast integrally with the case, and toepads are provided at the crank-end to add rigidity to the mounting. Bracing between the two engine units is provided by heavy webs cast integrally with the base and the sides of the cases. The steam end is of special analysis semisteel.

The crankshaft is made from a special alloy steel forging, ground to size, and is unusually large, being 6½ inches in diameter. It is mounted in heavy duty Timken roller bearings, which are supported by pedestals cast in the base. The bearing mounting is such that one end of the shaft is fixed and the other allowed to float, to take care of possible shaft expansion. The crankpin bearings are also Timkens, of a capacity that provides a liberal factor of safety. The cranks are set on quarters, so there is no possibility of the engine stopping on dead center. The moving parts are counterbalanced, and all reciprocating parts are made as light as possible, consistent with the requirements of the service. Thus the inertia of the system is reduced to a point that allows rapid acceleration either from rest, or when the direction of drive is reversed.

The valves are balanced so that valve movement is practically frictionless. At the point where the valve rod passes through the case, a special gland and oil wiper is provided that prevents the escape of oil along the rod. The piston rod is provided with a specially designed stuffing box. The crosshead has liberal bearing area, so that it should last indefinitely.

Lubrication of the reciprocating parts, eccentrics, crankpin bearings and valve links is provided for by splash from an oil bath in the base. The main bearings are totally enclosed, and lubricated by a grease pressure system, through ducts that project through the upper covers. The housing has been designed to provide ample oil storage space, so that frequent attention is unnecessary. The steam end proper is oiled by a mechanical lubricator.

The Houston, Tex., office of the E. D. Bullard Co., formerly Bullard-Davis, Inc., manufacturer and distributor of safety equipment, is now at 510 McGowan Avenue. J. J. Delahide, manager, is assisted by H. J. McCants, until recently safety director of the Gulf Refining Co. in Port Arthur, Tex.

## LINCOLN ANNOUNCES NEW PRODUCT, "STAINWELD A"

The Lincoln Electric Co., Cleveland, Ohio, has announced a new electrode to be used for welding the commonly called "18-8 stainless steels," which will be known as "Stainweld A."

The advantages claimed by the manufacturer of the rod are that by its use welds can be of the same chemical content as the stainless steel itself, resulting in a dense ductile weld. This is accomplished by having the welding done in a protected atmosphere, thus excluding the oxygen and eliminating oxidation of the weld metal.

The rod itself is of the same chemical composition as the metal and is coated with a material which in the intense heat of welding form a gaseous envelope around the arc. It is used with reversed polarity and permits the making of a weld that is just as impervious to corrosion as the metal it joins.

"Stainweld A" is obtainable in three sizes, one-eighth inch, five-thirty-seconds inch and three-sixteenths inch, of the regulation 14-inch lengths, and can be used for horizontal, vertical or overhead welding.

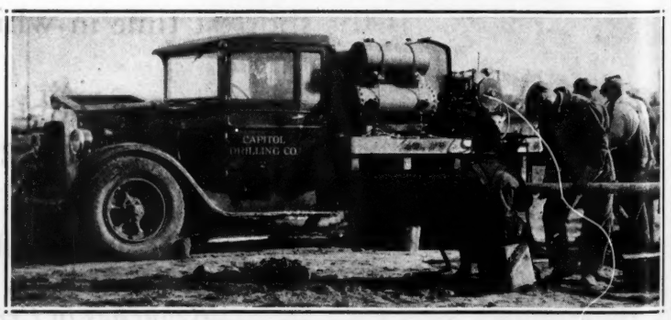
## ANCIENT PIPING STILL GOOD

When the 40-year-old Tacoma Building was demolished in Chicago recently to make way for the new 49-story One LaSalle Street Building, it was found its wrought-iron pipes and fixtures were still in such excellent condition that experts said they could have given many more years of service. According to the engineer of the old building, on wrought iron piping was replaced or repaired during the 40 years.

## DRILLING COMPANY DEVISES CONVENIENT POWER UNIT

With the heavy demand for power common to the deep wells in the Oklahoma City Pool it is the usual practice to use three or four 100 or 125-horsepower 250-pound pressure A.S.M.E. specification steam boilers at each drilling well and to operate those boilers at pressures from 265 to 275 pounds.

It is essential to keep the boilers in good repair and to do this repair work in the field Harry Franklin, vice president and general manager of the Capitol Drilling Co. has designed a power unit that is mounted upon a 2-ton Dodge Brothers (Graham) truck. It can be driven to the boiler plant in the field and in this way eliminate the necessity of moving the boilers to a shop for overhauling.



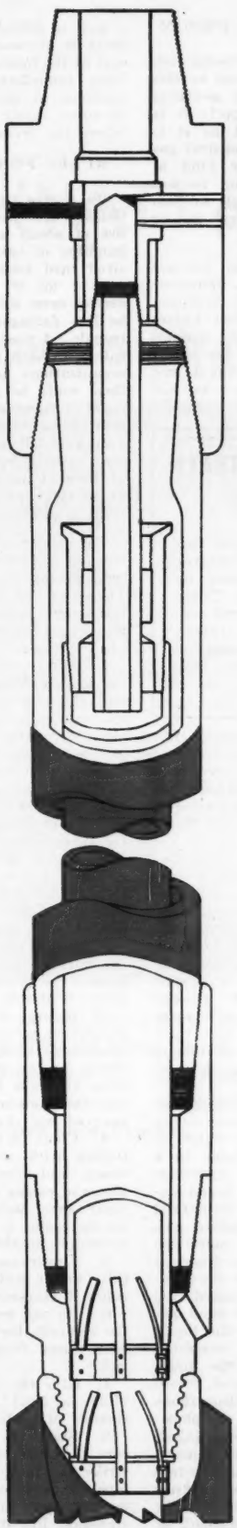

This power unit consists of an Ingersoll-Rand air compressor, a large size American Beauty electric welding machine, acetylene welding outfit, a power flue cleaner and small steel tool box.

The air compressor is used in cutting out the old or dirty flues, cutting off the tips of the flues and calking the stay bolts. This work is done inside the boiler by the use of portable air-driven tools.

After the flues are removed from the boiler they are cleaned with the flue cleaner which is run off the rear wheel of the truck from a power take-off. This flue cleaner not only cleans the flues, but also can be used to cut them in two for retipping.

After the ragged ends of the flue have been cut off the electric welder is used to weld new tips on them and they are then ready to return to the boiler. When again in place a power flue roller is used to roll them and the repair work is completed.

This outfit is an assembly of several standard pieces of equipment and is rapidly paying for itself in time saving which permits the boilers to be used a greater percentage of the time than would otherwise be possible.



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# Field Problems and Their Solution

**EDITED BY THOMAS F. SMILEY**

*In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.*

*Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.*

*In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.*

*In case an immediate answer is important, one will be given by mail if the writer requests it.*

## NATURAL PROTECTIVE COATING

**I find a reference in an article I have been reading to a "protective coating formed by scale." I have looked upon scale formed by the corrosive action of some kinds of waters as a thing to prevent if possible and to get rid of as quickly as possible if it accumulates in spite of efforts to prevent it. Is it a fact that scale actually is a protection, something to be invited, under any circumstances?—A. D. I.**

If the electrochemical theory of corrosion is accepted as correct, and this theory seems best to explain this phenomenon, it is quite true that at one point in the reaction nature provides a balance of the elements and compounds and if that balance is maintained corrosion ceases. Frank N. Speller, in his book on "Corrosion, Causes and Prevention," states the corrosive reactions as follows:

"Fe (metal) + $2H^+$ (ionic) = $Fe^{++}$ (ionic) + 2H (atomic),

"In this connection, Whitney says: 'Hydrogen acts as a metal and is electrolytically classified in the group with copper when compared with iron and zinc. That is, if a cell were made up on the Daniell model, iron being used instead of zinc, and hydrogen in place of copper, the cell would generate a current when the iron and hydrogen electrodes were connected. Iron would then dissolve with a velocity dependent on the total resistance of the circuit. So also, and for the same reason, iron when placed in a solution containing hydrogen ions will dissolve as the hydrogen precipitates, just exactly as when placed in the copper salt solution. That iron does oxidize or dissolve in all solutions containing appreciable quantities of hydrogen ions is well known. This electrochemical relationship between iron and hydrogen is the primal cause of rusting.'

"Although Whitney thus correctly stated the primary cause of corrosion, it remained for Walker to demonstrate another reaction, which is equally important if corrosion is to continue, viz., the removal of the polarizing or insulating film of hydrogen deposited on the surface of the metal when the action described by Whitney takes place. The removal of hydrogen can be stated as:

"(a) 2H (atomic) + $\frac{1}{2}O_2$ (dissolved) = $H_2O$ (liquid water) or

"(b) 2H (atomic) = $H_2$ (molecular).

"Although these two reactions can occur either separately or simultaneously, investigation indicates that the amount of gaseous (molecular) hydrogen produced by the corrosion of iron in neutral or alkaline waters is very small compared with the amount of hydrogen removed by oxidation. It is evident, then, that under these conditions, the oxidation of hydrogen must account for the progress of reaction (2) and govern the rate of corrosion."

From these theories of the action of elements that cause metals to corrode or dissolve, it can be shown that at one point in the process there is a film of hydrogen formed over the metal which if not removed will effectively protect the metal from further corrosion.

However, hydrogen will combine readily with oxygen and form $H_2O$ or water and as there is usually present an excess of oxygen where the corrosive action is taking place this hydrogen protective film is removed.

To retard corrosion, Speller and others have advocated and put into practical use a process for the removal of excess oxygen from water or other liquids that were coming in contact with metal and in this way assisted the natural protective coating of hydrogen to remain undisturbed for a longer period of time.

Nature has provided a balance in all chemical or electrochemical reactions, but man in his handling of nature's elements has destroyed this balance in some cases and the result is that nature is working to restore it and the result is the destruction of the man-made materials.

The theory of corrosion seems well founded and the remedy is also known, but the difficulty is to produce in commercial quantities pure metals that will be difficult to dissolve or corrode, and it seems only logical to expect that equilibrium will never be attained so long as the commercial aspect of the problem outweighs the purely technical requirements.

## BY-PASSING AND SLIPPAGE

**"By-passing" and "slippage" are two words used in technical discussions of oil production that are not clear to me. Do they mean the same thing, and if they do not will you tell me please what each of the terms does mean?—E. D. G.**

You are not the first person who has been confused by the apparent failure to observe the difference in meaning between these two terms. At the meeting of the Petroleum Division of the A.I.M.E. in Tulsa in 1928 James O. Lewis, petroleum engineer of Tulsa, offered an objection to what he viewed as a loose use of the words in a discussion of certain problems in oil production. "As previously used," said Mr. Lewis at that time, "the term 'by-passing' refers to the air or gas passing through the member of the sand body offering the least resistance. The tendency of the gas-oil ratio to increase in a uniform sand body as it is depleted should properly have another term, which is 'slippage.' In the latter circumstance the gas mostly passes through the centers of the depleted pores, leaving the oil clinging to the sand surfaces and in the angles of the pores. There is a very important practical distinction and it is desirable that the two terms be not confused."

## GAS AND OIL OF SAME ORIGIN

**Just what is the relation between natural gas and petroleum? I mean by this question, what is known, if anything about the origin of natural gas? Is it a matter of speculation just as it is about oil? And do oil and natural gas have the same or a similar kind of composition? What leads me to ask this question is the fact that we can get gasoline from either natural gas or petroleum.—S. S. T.**

Both petroleum and natural gas are composed of hydrocarbons. A hydrocarbon is a compound containing hydrogen and carbon only. The simplest hydrocarbons are gases at ordinary temperatures. With increase in molecular weight they change to the liquid and eventually to the solid state. As you of course know oil deposits generally are accompanied by natural gas. The matter of their similarity in point of origin and composition is discussed fully and clearly by Dr. William L. Lacy, associate professor of chemical engineering in the California Institute of Technology, who says:

"The gas is of similar origin to that of the rest of the petroleum and is composed of hydrocarbons of low molecular weight. These volatile hydrocarbons may be condensed to liquid state by a sufficient increase of pressure or lowering of temperature, or by both together. In a similar manner the liquid hydrocarbons may be converted to the gaseous state by decrease of pressure or increase of temperature. The dividing line, then, between natural gas and liquid petroleum is one which shifts with change of pressure or temperature.

"In view of this similarity it is not surprising that natural gas, even under temperatures and pressures at which its constituents are gases, is soluble to a certain extent in the liquid hydrocarbons. When oil and gas are found under pressure, coexistent in a formation, the oil is saturated with dissolved gas. The higher the pressure, the more gas will be condensed to liquid or dissolved in the liquid hydrocarbons. If the pressure upon the system is decreased, the gas solubility is decreased, and some material which was contained in the liquid phase becomes gaseous. This formation of gas will occur throughout the liquid wherever the pressure is lowered.

"When gases and volatile hydrocarbons are removed from the solution, the physical properties of the latter are changed. The resulting liquid has greater density, greater viscosity, and greater surface tension than when the light hydrocarbons were present in larger proportion. The extent of these changes will depend, of course, upon the amounts moved from solution, which in turn depend upon the decrease of pressure.

"In the formation below the surface of the earth, the petroleum is found dispersed throughout the small interstices of porous oil sands saturated with gas under pressure which may be as high as 100 atmospheres or even higher. When a well is drilled into this formation and fluid is allowed to flow out, the pressure at the intake of the well is decreased. This immediately causes a pressure gradient in the formation which tends to force fluids toward the well intake where the pressure is lower."

### WHY WAS IT CALLED THAT?

**CASING DOG**

The casing dog is a fishing implement the distinguishing features of which are sawlike pieces, or dogs, sliding on a wedge. These get a bulldog grip on severed casing, which probably is the reason that "bulldog" is another name for the device. It also is called a casing spear.

## RULES FOR RUNNING CASING

**On a trip through one of the big oil fields a few weeks ago I saw a printed list of about a dozen rules for proper handling of casing. It was on a good-sized card tacked up in a derrick. It gave a lot of good advice and if any derrick crew would observe it there would be less damaged casing and less casing trouble. I was told afterward that these rules had been written by one of the big organizations of oil men and copies of them could be gotten. If I could get a copy of these rules I would have them printed on cards like the ones I saw. Can you tell me where I could get a copy of these rules? If you have a copy of them I believe it would interest a lot of field men if they were printed in your magazine.—P. A. N.**

The rules you saw were doubtless those recommended by the American Petroleum Institute for the guidance of casing crews. There are 10 of them and they sometimes are called the "Ten Commandments for Casing Crews." Here they are:

1. Before running any casing, examine the elevators carefully, making sure that there is a good square surface for the couplings to rest upon. See that elevators, particularly of the gate type, are not worn nor sprung. Take no chances with equipment that appears to be in any way defective.

2. Remove the protectors from the top row of casing, then thoroughly clean the threads of pipe and couplings, using a soft pine paddle, following this with a bristle brush and gasoline. If steam is used for cleaning the threads, make sure that the threads are thoroughly cleaned and that the thread surface is dry before applying the Zinc Dust grease. Do not use a wire brush and do not remove the protectors below the top row until all of this row bas been run.

3. Inspect threads of pipe and couplings very carefully. File out with a small three-cornered file any threads which are closed up or slightly bruised, but lay aside any pipe that is badly damaged or has the ends of the pipe or coupling knocked out of round.

4. Clean six or more thread protectors with a brush and gasoline or steam, and screw these on the first six pieces of casing near the walk that previously have been cleaned and inspected. As the casing is run return these cleaned protectors to the rack to be used again.

5. Lower each piece of casing carefully to the walk without dropping; use ropes if necessary.

6. Do not remove the protector from the cleaned threads until the casing has been raised from the buggy in the derrick.

7. Give the threads of pipe and couplings a final inspection and coat the threads of each with Zinc Dust grease.

8. Stab the pipe carefully, taking care that the end of the pipe does not strike the face of the coupling. If the pipe drops into the coupling, or if it is permitted to tilt to one side after stabbing, lift it up, clean the threads, file out any that are damaged, and then apply another coat of Zinc Dust grease.

9. After stabbing use a casing pole or hand tongs for the first part of the screwing. This will enable you to tell if the joint has been properly stabbed, and if it will make a good fit.

10. Tighten the joint with tongs and jerk line, or by other power methods.

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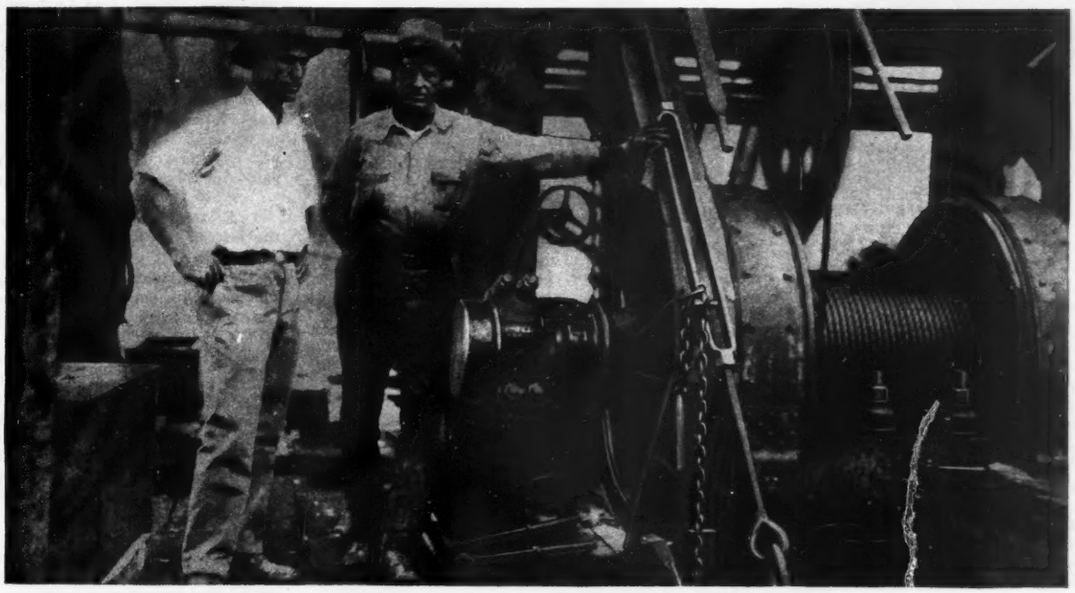

Type RR2 Emsco Draw Works, built by the Emsco Derrick and Equipment Co., Los Angeles and Houston . . . protected by Hyatt Roller Bearings.

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PRODUCT OF GENERAL MOTORS

# MEN KNOWN IN OILDOM

**Fred C. Hall**

Fred C. Hall, a leading figure in the natural gasoline industry, was born on a farm at Galt, Ill., but his rural experience was limited owing to the fact that he was only 2 years old when he was taken to St. Joseph, Mo. After his schooldays in that town had ended he got a job calling train crews for the Missouri Pacific Railroad. After a while he was put in the office, where he held various jobs, eventually becoming chief clerk in the terminal office of the railroad in Coffeyville, Kans. Promotion to freight and ticket agent in Nowata, Okla., followed.

It was the transfer to Nowata that resulted in Mr. Hall entering the natural gasoline business, for after 15 years' service with the railroad the position of office manager of the Henderson company was offered him by Frank C. Henderson, president of the organization, which then had its headquarters in Nowata. That was in the spring of 1918. A year later he was made secretary, then sales manager. In 1926 Mr. Hall was made general manager and secretary of the company, which in the meantime had moved its head offices from Nowata to Tulsa. Besides holding these offices Mr. Hall is sales manager for the Rainbow Gasoline Corporation, a subsidiary of the Henderson company. He is a member of the board of directors of the Natural Gasoline Association of America and the sales managers committee. The Henderson company was among the first to adopt the plan of building gathering systems and booster stations for the transportation of natural gas from the wells to a central point, where the gasoline was recovered.

Mr. Hall, who resides in Tulsa, spends much of his time on the road, inspecting and developing the company's properties in Oklahoma, Texas and Arkansas. Branch offices are maintained in El Dorado, Ark., and New York.

# PERSONAL PARAGRAPHS

Mr. and Mrs. George Rawlings, of Negritos, Peru, are visiting in Toronto, Canada.

* * *

E. B. Fish was re-elected vice president of the Wellington Oil Company at the annual meeting in Los Angeles, Calif.

* * *

W. T. Funk, of the Carter Oil Company staff at Tulsa, and formerly located in Denver, Colo., was a Denver visitor this week.

* * *

Mr. and Mrs. W. L. Mackenzie, Jr., sailed from Talara, Peru, on May 2, and will spend some time in Ontario en route for Vancouver, British Colombia, where they will make their home.

E. T. Kelly, Houston, Tex., representative of the General Insulating & Manufacturing Company, has returned from a trip to New Orleans, La.

* * *

W. C. Hildebrand, assistant sales manager of Crown Central Petroleum Corporation, Houston, Tex., has been in Chicago, Ill., on business.

* * *

George C. Kiskadden, independent oil operator of California, has established West Texas and eastern New Mexico headquarters at Midland, Tex.

* * *

Paul Getty has returned to Los Angeles, Calif., from a trip abroad, having been called home because of the illness of his father, George F. Getty.

* * *

George Tyson, Houston, Tex., district sales manager of the Reading Iron Company, has returned from a motor trip with his wife to New Orleans, La.

* * *

Frank Cullinan, vice president of the American-Republic Corporation, Dallas, Tex., has been making a three weeks' stay in New York on company business.

* * *

Frank W. DeWolf, vice president and general manager of the Louisiana Land & Exploration Company, Houston, Tex., is spending some time in the East on business.

* * *

A. J. Kraemer, of the United States Bureau of Mines, is visiting Bartlesville, Okla., to confer with other representatives of the bureau in respect to current projects.

* * *

R. E. Wertz, vice president of the Producers & Refiners Corporation, of Independence, Kans., is in Denver, Colo., on his way to inspect the company's operations in Wyoming.

* * *

Wallace A. Belstrom, head of the land department of Mills Bennett Production Company, Houston, Tex., has been passing around the cigars in honor of a baby daughter.

* * *

E. H. Patterson, chief scout for the Shell Petroleum Corporation, Gulf Coast division, Houston, Tex., underwent an operation which kept him away from his office two weeks.

* * *

Paul N. Boggs, Jr., son of Paul N. Boggs, vice president of the Union Oil Company of California, is to marry Dorothy Dwan, a motion picture actress and widow of Larry Semon, in the near future.

* * *

John McFadyen, of Casper, Wyo., vice president of the Ohio Oil Company, passed through Denver, Colo., on his way to Lea County, New Mexico, where that company has several operations under way.

* * *

E. J. Stenvert and John Visser, employes of the Royal Dutch-Shell Company, arrived in California recently from Balik, Papan, Borneo, Dutch East Indies, for the purpose of studying improved methods of drilling and production.

* * *

T. C. Towl, Pittsburgh, Pa., superintendent of the Southwest Pennsylvania Pipe Line Company, and Mrs. Towl, will leave this week on an extended tour of the Mid-Continent and Pacific Coast oil fields and will return in six weeks.

* * *

Hugh Alspaugh has been named general manager of the associated McIlroy Oil companies, the Dixon Creek company and the Cockrell-McIlroy company. Earl Calloway has been general manager but recently resigned to perfect the organization of a new company.

* * *

Fred P. Shayes, with offices at Beeville and in charge of Southwest Texas operations for the Houston Oil Company, has been transferred by the company to the Houston office to have charge of subsurface work. His place at Beeville has been filled by the appointment of Phil Martin.

* * *

H. C. Weigley, of Houston, Tex., and Murray D. Smith, of New York, representing the Bullard-Davis Company, manufacturers of safety equipment, were in Shreveport, La., during the week in connection with the vigorous campaign of safety work recently inaugurated by the Louisiana-Arkansas chapter of the Petroleum Safety Council.

Scott Turner, director of the United States Bureau of Mines, delivered the graduating day address during commencement exercises at the Colorado School of Mines, May 16.

* * *

Kenneth R. Kingsbury was re-elected president of the Standard Oil Company of California by the board of directors following the annual meeting of stockholders held in San Francisco recently.

* * *

J. H. Langston, chief scout, is general chairman, and Harvey Muntzel is vice chairman of the committee arranging for the twelfth annual picnic of the Sun Oil Company at Kidd Springs, Dallas, Tex., June 10.

* * *

H. H. Beck, in charge of the Independent Oil & Gas Company's West Texas offices at San Angelo, underwent an emergency operation for appedicitis at the San Angelo Hospital, and is reported as doing favorably.

* * *

H. H. (Dick) Clark, vice president and sales manager of the Baash-Ross Tool Company, Los Angeles, Calif., is leaving this week for an extended trip throughout the Mid-Continent fields, visiting the company's different stores and shops.

* * *

John L. Fletcher, advertising manager for the Arkansas Natural Gas Corporation, of Shreveport, La., was elected chairman of the North Louisiana division of the State Chamber of Commerce at the recent convention of the organization.

* * *

John Eoghan Kelly, consulting engineer of New York, has been elected director and vice president of Midland Natural Gas Company, a merger of 27 natural gas and petroleum producing properties located in West Virginia and Pennsylvania.

* * *

T. E. Meese has been made assistant manager of the Louisiana division in charge of retail sales, effective May 12, and G. P. Weber, assistant manager, Louisiana division in charge of operations and maintenance, sales department, for the Louisiana Oil Refining Corporation, at Shreveport, La.

* * *

R. J. Ahsens, assistant division manager of Indiana of the Shell Petroleum Corporation, has been appointed assistant in charge of distribution for the Chicago region. A. W. Nation, former district manager in charge of tank car sales at Cleveland, Ohio, has been appointed assistant in charge of tank car sales, northern area. The Chicago division includes Wisconsin, Illinois, Indiana, Ohio and Michigan.

* * *

C. B. Wilson, formerly of the Joplin Gas Company, a Cities Service subsidiary, has been promoted and transferred to Shreveport, La., where he will have charge of the new business department of the Southern Cities Distributing Company, another Cities Service subsidiary. Mr. Wilson is already in Shreveport, La., organizing his department and assembling display and warehouse stocks of gas appliances for domestic and industrial use.

* * *

Henry G. Schneider, vice president in charge of the land and geological departments, and A. L. Byrd, of the land department of the Dixie Oil Company, were recent visitors to Muskegon, Mich. Mr. Byrd was stationed in Muskegon during the early development of the western Michigan Field, and Mr. Schneider succeeded F. O. Prior, an occasional visitor to the Muskegon Field a year and more ago, as vice president of the Standard of Indiana subsidiary.

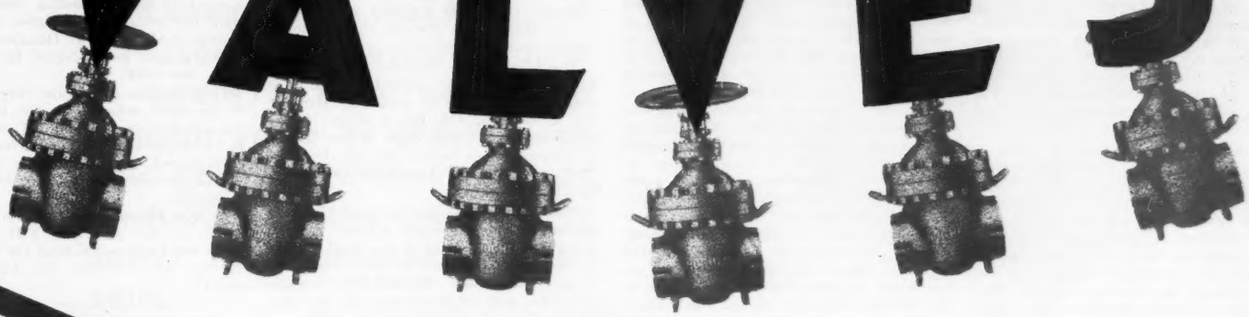
* * *

E. C. McCarnes, production superintendent for the Transcontinental Oil Company at San Angelo, Tex., has left for Rumania where he drilled the first rotary test for his company in 1924-25. His trip will cover about three months, and he will be doing inspection work and checking up on properties owned jointly by the Transcontinental and Romano-Americana, which is the Standard of New Jersey subsidiary in Rumania. W. E. Wrather, Dallas, Tex., geologist, will accompany Mr. McCarnes. They are to sail from New York on Saturday, May 24. Before going to New York, Mr. McCarnes will spend several days at the company's main office in Tulsa. E. S. Wells of Tulsa will take Mr. McCarnes' place at San Angelo while he is away. Mr. and Mrs. McCarnes first went to Rumania in 1922, and he made his second trip in 1924. This will be his third.

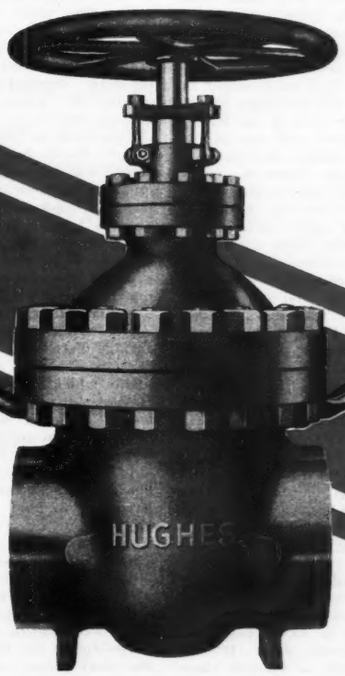
# HUGHES

## DRILLING — MANIFOLD

# VALVES



SUPREME IN PERFORMANCE

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# Natural Gas Developments

## INCREASE CARBON YIELD BY INJECTION INTO COKE

Largely increased yields of carbon black from natural gas have been obtained by injecting the gas into a bed of ignited coke in the course of tests recently conducted by the United States Bureau of Mines, Department of Commerce, with the Louisville Gas & Electric Co., at Louisville, Ky.

The methods used in obtaining the increased yield consist in causing the natural gas to pass through a chamber containing highly heated solids and to contact the surface of the solids. The heating of the solids and the gas cracking operations are alternated. In providing the solids, refractory materials are commonly thought of and they have been used. It seems that up to a recent date few attempts have been made to produce carbon black by injecting natural gas into a bed of incandescent solid fuel (coke).

In the tests conducted by the Bureau of Mines at Louisville, a standard water-gas generator 9 feet in diameter was used; the operation consisted essentially in first heating the bed of ignited coke by air blasting, discontinuing this, and then introducing natural gas; the cracked gas with the entrained carbon was removed through the regular offtakes. The cycle was repeated regularly. The yield of carbon was approximately 7 pounds per 1,000 feet of natural gas passed. The quality of the carbon was not equal to the best, but it is believed to be such that it will find use at a fair price in certain industries.

Further tests will more definitely establish its value relative to carbons made by other processes. It is interesting to note that in this process not only can carbon black be recovered, but also a gas containing a high percentage of hydrogen. The hydrogen, in certain localities where natural gas is available, may find use as one of the raw materials in the synthesis of motor fuel, methanol, ammonia or other materials. A report of investigations more completely describing the experiments has just been issued by the Bureau of Mines.

## CHICAGO GULF CORP. TO ACQUIRE LAVACA

CHICAGO, May 17.—Formation of a new natural gas company by Chicago financial interests has been announced. Under the name of the Chicago Gulf Corp., this group has acquired oil and gas properties of the Jackson County Oil Syndicate, comprising about 30,000 acres in Jackson County, Texas.

John Taylor Wilson of the investment banking firm of E. H. Rollins & Sons, heads the new corporation as chairman of the board, president and treasurer. Other officers are: Charles A. Wright, vice president and general manager; Gene L. Wright, vice president; Edward Price, secretary, and Earle Ewins, assistant secretary. In addition to the officers the members of the board of directors are: Charles H. Bliss, Charles H. Fox, Henry W. Price and Eugene Cary.

Approximately $1,000,000 in cash has already been put into the property in development work, most of which was contributed by prominent Chicagoans. The company plans to acquire the properties of the Lavaca Gas Corp. and has a contract with the Houston Gulf Gas Co. to sell all of its gas production. The Houston Gulf Gas Co. has a pipe line leading directly to the corporation's wells and the contract provides for the building of additional pipe lines to any new wells which may be drilled.

## CARBON BLACK OVERPRODUCTION NEW THREAT IN THE PERMIAN BASIN

By L. E. Bredberg
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., May 17.—The Railroad Commission of Texas has granted a permit to the Ethane Carbon Co. to construct a 1,000,000-foot capacity carbon black plant in the Big Lake Pool, Reagan County, the capacity to be enlarged if the plant proves successful. The plant will burn residue gas from casinghead gasoline plants now operating in the Big Lake Field, and the permit authorizes maintenance and operation of the plant for a period of five years, at or near Texon. The Railroad Commission reserves the right to terminate the permit on 90 days' notice after a hearing in the event the return of residue casinghead gas to the producing strata is proven by general use to be practical, economical and in the interest of conservation. If at any time during the period the available supply of natural gas for domestic or industrial purposes in the area, practically accessible by pipe lines, is insufficient, the Railroad Commission will have the right to divert an amount of gas sufficient to meet the demands, this to be diverted from the carbon black plant.

The gas to be used will come from wells completed in the 3,000-foot horizon, and nothing has been said about the sweet gas which comes from the pay horizon below 8,000 feet where there are now four producers, two being owned by the Continental Oil Co. and two by the Big Lake Oil Co., the first of the former being the deep discovery well and having produced far over a million barrels of oil in the past 16 months. These deep tests produce oil which is much higher gravity than that found at the 3,000-foot horizon, and is of a sweet variety, and the gas is sweet. Gas from these tests has a high gasoline content.

The carbon black plant is to be erected as speedily as possible and must be in operation within six months. An additional six months will be granted for the construction of additional units to raise the capacity of the plant to 5,000,000 feet of gas daily when, and if desired.

Although there are many carbon black plants operating in the Ranger and North Central Texas and Panhandle district, around the towns of Breckenridge, Borger and many other towns near gas and oil producing pools, this plant in the Big Lake Pool will be an innovation to West Texas, where at present much gas is being blown into the air in the various pools. This gas is sulphurous, and unlike the gas produced in the above-mentioned areas, consequently does not readily lend itself to gasoline and other by-products production as sweet gas, with higher gasoline content, does. If this plant, however, proves a success, there undoubtedly will be other plants put up in the various West Texas pools where there are gasoline plants.

The Humble Oil & Refining Co. has a large specially equipped gasoline plant in the Yates Pool, Pecos County, handling gas from wells on many leases in that pool, the gas formerly blowing into the air, with no methods constructed to utilize it, and millions of feet of sulphur gas were being wasted daily, most of the gas vents burning, so as to prevent too much of the gas accumulating in the arroyos and killing men and animals, for it is quite poisonous.

The Phillips Petroleum Corp. has a gasoline plant in the Church-Fields Pool, Crane County, which is using much of the gas which was formerly being burned as in the Yates Pool, and a carbon black plant may later be erected in this pool if the Big Lake plant proves a success.

The gas in the Crane County Pool is also poisonous, and several men and many domestic animals lost their lives by asphyxiation before the companies could take all precautions possible to prevent such deaths. More accidents probably happened in this pool than in any other pool of the Permian basin, caused by the gas, and from a distance, at night, the pool represents a forest of fire due to so many flares casting their flaming fingers in the air.

The Chalk Pool, Howard County, also has a gasoline plant, owned by the Magnolia Petroleum Co., and the Humble Oil & Refining Co. has a plant in the Hendricks Pool, and there is one in the Westbrook Pool owned by the Col-Tex Refining Co. The Westbrook Pool is in Mitchell County.

The Panhandle district leads in production of carbon black supply, producing about 87 per cent of the total carbon black manufactured in the State of Texas, or about 200,000,000 pounds per year, and approximately 25 per cent of the Nation's production for 1929.

The first plant in the Panhandle was erected in 1925 in Hutchinson County, the gas used coming from Carson and Hutchinson Counties, and since that time, with the erection of many more new plants, the yearly production has increased steadily until the market at present seems to be glutted, and the price of carbon black has dropped proportionately, due to stocks of the product increasing as more plants were built and put into operation. Rubber companies are the largest buyers of carbon black, and whenever the rubber market slumps, the sale of carbon black slumps and the price of the commodity tumbles accordingly. The manufacturing of ink also uses many tons of carbon black.

Due to lack of residue gas, the Breckenridge district has fallen off in the production of carbon black and some of the plants which have been operating around Breckenridge have been dismantled and moved to other parts of the country, some of them to the Panhandle district and others out of the State.

It has been reported that the carbon black plants around Pampa and Borger have had to hold about 50 per cent of their output, due to lack of demand, and if the West Texas district, which is a large potential reservoir of the product, becomes a competitor in the market there will be a still further tendency of overproduction of the product and a resultant price deteriorating effect.

Heretofore the Permian basin has been the great threat, and named as the district responsible for overproduction in oil, along with other large flush production areas, and now it may seem as if the district may also become a great threat to the carbon black industry.

### UTILITIES P. & L. GAS

NEW YORK, May 17.—Utilities Power & Light Corp. reports for 1929 aggregate production of 15,813,199,000 feet of natural gas, an increase of 4,856,387,000 feet, or 44 per cent, over the 10,956,812,000 feet produced in 1928. Manufactured gas output by Utilities Power & Light in 1929 was 11,823,593,000 feet, a gain of 32 per cent over the 8,963,024,000 feet produced in 1928. The company has operating properties in the United States, Canada and Great Britain.

## GAS LINE TO ARIZONA FOR SMELTER SUPPLY

TUCSON, Ariz., May 17.—Natural gas is to be piped from the Texas fields to supply Arizona copper smelters and domestic purchase, according to reported negotiations of the Phelps Dodge and Calumet and Arizona mining companies.

Groups interested in the laying of the gigantic pipe line and its operation, it is said, are the Ford, Bacon & Davis Co. of New York City and the Sanderson & Porter Co.

Although a pipe line from the Middle Western fields has been in operation to El Paso, Tex., for some time, it is understood the proposed Arizona line will be a separate project, costing about $5,000,000. The plans contemplated a terminal storage tank either at Douglas or Globe, Ariz., gas to be delivered for about 30 cents per 1,000 feet.

Construction of a huge copper smelter at the point selected for the terminus of the gas line in Arizona, all concentrates to be shipped to this point for smelting, is proposed, dependent upon consummation of the merger of the two mining companies.

It was pointed out that the establishment of the gas line will eventually serve the Cananea Mining Co. in Sonora, Mexico, and possibly the Arizona Edison Co.

### GAS FOR ARKANSAS TOWNS

SHREVEPORT, La., May 17.—Three more towns of eastern Arkansas have been added to the list of communities in nine states served with gas from the northeastern Louisiana fields and two more will be added this month. Ark-La Pipe Line Co. recently completed laterals to the Mississippi Valley Fuel Corp.'s Monroe-St. Louis line and Southern Cities Distributing Co. has completed distributing systems in Warren, Monticello and Stuttgart, and Lonoke and England will be added during the current month. Both concerns are subsidiaries of the Arkansas Natural Gas Corp. Approximately 500 meters will be installed in the five towns to begin with, 170 having been installed in Stuttgart.

In Shreveport, Southern Cities Distributing Co. is replacing a cross-town 10-inch main with 16-inch. At present only one unit of the line is being replaced with larger pipe. This will serve West Shreveport, but eventually the larger line will reach the downtown section.

### GAS FOR TOWN OF MANY

SHREVEPORT, La., May 19.—Tooke & Reynolds of Arcadia, La., operating a number of utilities plants in the smaller towns of northwestern Louisiana, have been granted a franchise to supply the town of Many, 8 miles southeast of the Zwolle oil field, with gas and expect to have the distributing system completed and in service by September 1. Fuel will be supplied from two wells in the Pleasant Hill district of Sabine Parish of which Many is the seat, through 20 miles of 4-inch line. The wells are Bridges-Clark Oil Co.'s No. 1 Cook, Section 3-9-12, completed last month with 20,000,000 feet open flow, and No. 1 Gay, in the same section, which gauged approximately 24,000,000 feet, both being semi-wildcats southeast of Pleasant Hill oil field.

### SOUTHERN UNION ADDS UNITS

The Southern Union Gas Co. has purchased all capital stock of the Durango Natural Gas Co. and of the Mesa Grande Natural Gas Co., T. F. Murchison, president of the former, announced in Chicago.

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# Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

*This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.*

*Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.*

*All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.*

*Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.*

## CAUSES FOR COKE DEPOSITION

**Have you information as to what are considered to be the causes for the deposits of coke that collect in the tubes, etc., when cracking?—T. H. A.**

The fundamental principle involved when cracking a hydrocarbon molecule is that there shall be a breaking apart of a complex unit into simpler substances. These substances range from gas, through liquids of different densities, to solid material. If the cracking operation is carried to the ultimate there will remain a heavy tar-like mass, carbon, or coke. Also, as the temperature is raised there is an advance toward the formation of less stable products and as these decompose, in the absence of air or hydrogen, the carbon separates and collects in favorable spots.

Operators explain the formation of carbon on the cracking tubes as being the result of skin cracking. That is, some of the particles of oil are heated so far beyond the initial and required stage that carbon must be thrown down. There are not enough hydrogen molecules present to combine with the carbon and therefore keep it in the form of some compound which will be a gas or liquid.

A sudden drop of even a very few degrees in the temperature will tend to carbon deposition when all other conditions remain the same. It seems reasonable that, when operating near the higher limits of temperature for cracking, there may be heavy bodies present which remain liquid so long as the temperature remains above the melting point and that a lowering of the temperature will cause such compounds to deposit a skin on the tubes. This deposit will soon be baked free of liquid so that the solid carbon remains.

The deposition of carbon may be prevented, to a limited extent, by maintaining a high velocity together with adequate pressures and temperatures. Another means of control is to not endeavor to do all the cracking in one operation; a series of treatments or rapid passes through the cracking unit is considered better practice than a single prolonged severe operation.

You will be interested in "Some Developments in Commercial Cracking," a paper by A. L. Strout, presented before the American Petroleum Institute, Chicago, December 4, 1929. He stated: "When an oil is subjected to cracking conditions, the reaction is progressive. The products formed are gas, gasoline, intermediate oil, tar, coke, and sediment. There is evidence that all of these products are not formed simultaneously during the breaking up of an original compound. Coke formation especially appears to proceed through the stages intermediate oil, ultimate tar, and finally coke; that is, coke will not be formed unless cracking is carried beyond a certain definite point, and it results not directly from the decomposition of original compounds but from the progressive cracking of the tars formed during the decomposition of intermediate oil beyond the 'ultimate' stage."

## AVERAGE GASOLINE AND GASOLINE TAX

**Can you give me information covering the average quality of the gasoline sold and also the amount of the tax collected in the different states on the sale of gasoline?—A. C. G.**

The Bureau of Mines reports, in the Twenty-first Semiannual Motor Gasoline Survey, R. I. 2995, March 1930, analyses representing 158 samples, collected in 12 cities, of gasoline. This survey does not include all grades of gasoline but is confined to motor gasoline to meet the Federal Specification of June 11, 1929, for U. S. Motor Gasoline. These analyses are averaged for summer and winter months.

| | Summer | Winter |
|---|---|---|
| Gravity A.P.I. | 57.2 | 58.2 |
| I. B. P. | 112 °F. | 99 °F. |
| Per cent | | |
| 10 | 168 | 157 |
| 20 | 199 | 191 |
| 50 | 268 | 263 |
| 90 | 382 | 378 |
| Endpoint | 428 | 423 |

According to the United States National Automobile Chamber of Commerce the gasoline tax for the year 1929 was $415,000,000. The fuel was used by 26,400,000 automobiles, trucks, etc. This tax indicates an average tax of $15.75 for each vehicle, $138 to the mile of road and $628.75 per mile of surfaced highway. The machines increased 8 per cent, or 1,650,000, but the tax increased over 35 per cent; that is, about $110,000,000.

## VOLUME OF GAS FROM OIL OF VARIOUS GRAVITIES

**What would be the volume of expansion from liquid to vapor, at atmospheric pressure, say cubic feet of vapor per gallon of liquid, covering a range of from 25° A.P.I. by 5 degrees to 70° A.P.I.?—R.L.W.**

The volume of gas that may be obtained from oil will vary with the character of the oil, the temperature, time and pressure. The molecular volume may be used, with fairly good results, for the lighter petroleum products but is not very good when an effort is being made to calculate the volume of gas that may be produced by the heavier oils.

Molal volume may be defined as the volume, in cubic feet, resulting when the molecular weight of a substance, in pounds, is converted to gas without loss. The molecular weight of water is 18, and 18 pounds of water may be converted into 358 cubic feet of gas at 32° F., or 379 cubic feet at 60° F. This is true of all substances that may be changed to the gaseous form at ordinary pressures. If this method for estimating gas volumes on the basis of gravity is to be used it will be necessary to assume that some known hydrocarbon corresponding to the density will be converted to gas. The specific gravity of nonane is 0.7219, or 64.5° A.P.I.; and the molecular weight is 128, then 128 pounds of 64.5 gravity gasoline, if pure nonane, would in theory form 379 cubic feet of gas at 60° F. The difficulty with this suggestion is that the heavier the hydrocarbon the lower is gas formation and the greater is the formation of solid material.

The Bureau of Standards has recently announced a study of the thermal properties of petroleum products, in Miscellaneous Publications, No. 97, and gives a formula for calculating vapor volumes from which the material following has been adapted.

The specific volume of oil vapors as a function of the specific gravities of the oils is expressed as cubic feet per pound and the following formula has been found applicable for oils between .51 and .8 specific gravity and its estimated accuracy is within 10 per cent. The following formula is suggested for practical use and the result is in cubic feet per pound:

$$\text{Sp. vol. of vapor} = \frac{.242(t+460)}{p} \times \frac{(1.03-d)}{d}$$

In this formula d is the specific gravity of the liquid at 60°F. and p is the absolute pressure in pounds per square inch.

## PETROLEUM COKE PRODUCTION AND USE

**Could you give me some idea as to what states make the greater part of the petroleum coke now produced? Also anything you may have indicating the present commercial use made of petroleum coke would be appreciated.—A. M. I.**

A recent report by E. B. Swanson, Bureau of Mines, Economic Paper 9, containing an economic survey of the production and uses of petroleum coke contains much information that would be of interest to you. Tabe 1, Page 4, shows the source and value of petroleum coke.

Quantity and value of petroleum coke production, by states, 1927:

| States— | Plants | Quantity (short tons) | Value | Aver. value per ton |
|---|---|---|---|---|
| Ark., Ky. | 3 | 8,516 | $33,894 | $3.98 |
| California | 3 | 61,641 | 123,282 | 2.00 |
| Colo., Mont. | 3 | 3,237 | 13,764 | 4.25 |
| Ga., S. C., W. Va. | 3 | 10,354 | 60,135 | 5.81 |
| Illinois | 5 | 100,964 | 539,020 | 5.34 |
| Ind., Mo. | 4 | 171,697 | 1,183,824 | 6.90 |
| Kansas | 7 | 103,150 | 400,561 | 3.83 |
| Louisiana | 5 | 134,348 | 1,416,497 | 10.54 |
| Md., N. Y., R. I. | 5 | 37,007 | 306,708 | 8.29 |
| New Jersey | 5 | 51,461 | 492,987 | 9.58 |
| Ohio | 6 | 61,691 | 433,102 | 7.02 |
| Oklahoma | 11 | 119,797 | 283,036 | 2.36 |
| Pennsylvania | 8 | 76,766 | 613,407 | 7.99 |
| Texas | 19 | 244,768 | 995,725 | 4.07 |
| Wyoming | 5 | 58,113 | 273,654 | 4.71 |
| Total U. S. | 92 | 1,243,510 | $7,169,596 | $5.76 |

The different commercial uses made of this coke are listed as follows: Carbon electrodes; carbon brushes, plates and specialties; specifications; aluminum; abrasives and artificial graphite; calcium carbide; ferro-alloys; metal industries; paints and pigments; gas-making material; ceramic industries; miscellaneous. It is extensively used for various special fuel purposes.

## LATENT HEAT OF VAPORIZATION

**I would appreciate information showing the heat of vaporization, either calories or B.t.u. per gallon or other suitable volume of petroleum distillates ranging from 25° A.P.I. to 70° A.P.I.—R. L.W.**

Latent heat of vaporization, or evaporation, is the quantity of heat, expressed in calories or B.t.u., required to convert a unit of a liquid at the boiling point into vapor at the same temperature. The temperature of a pure liquid remains constant at the point of vaporization but a definite quantity of heat must be added, or utilized, to cause evaporation to continue. This added heat does not increase the temperature of the liquid but is lost in causing the liquid to pass to the vapor phase. The number of degrees so consumed, when converted to the proper unit, is called the heat of vaporization. The determination is made at the boiling point under normal atmospheric pressure.

The latent heat of vaporization of crude oils and certain distillates cannot be determined with any great degree of accuracy because of the character of the material; that is, petroleum cannot be evaporated without decomposition. What information we have on the subject is confined to petroleum distillates.

Cross, Handbook of Petroleum, Asphalt and Natural Gas, Page 296, produces a curve showing the approximate heat of vaporization for petroleum distillates at the boiling point.

Gurwitch-Moore, Petroleum Technology, Page 164, states: "Our knowledge of the heat of vaporization of petroleum products is even more meager than that of their specific heats. The question of the heat of vaporization of petroleum crude oils naturally does not arise, as with extremely few exceptions they cannot be completely evaporated without undergoing decomposition and forming solid residues. But even determinations of the latent heat of vaporization of the various distillates have been made in very few cases."

The following values are those determined for the latent heat of vaporization of different fractions in the laboratory of Nobel Brothers at Baku:

| Specific gravity | °A.P.I. | Boiling point °C. | Calories per 1 kg. |
|---|---|---|---|
| 0.6400 | 89.6 | 40 0 | 80 6 |
| 0.6982 | 71 2 | 72 8 | 74 95 |
| 0.7428 | 59.0 | 92.2 | 68.25 |
| 0.7615 | 54 3 | 100 7 | 66.83 |
| 0.7968 | 46 1 | 155 7 | 53 6 |
| 0.8129 | 42.6 | 175 5 | 51 6 |

The gravities in terms of A.P.I. degrees do not appear in the original but have been inserted here for convenience.

The Bureau of Standards, Miscellaneous Publication, No. 97, supplies a method for calculating latent heat of vaporization expressed as B.t.u. per pound of liquid for use with oils between 0.64 and 0.91 specific gravity (89.6° and 24.0° A.P.I.) and temperatures between 100° and 600° F.

$$\text{L. H.} = \frac{1}{d} - (100.9 - .09t)$$

Expressed in B.t.u. per gallon the equation becomes: L. H. = 925 — .75t. The results are within a 10 per cent accuracy range. (d = specific gravity at 60° F. t = temperature.)

## HEATING VALUES AND GRAVITIES

**What are the coefficients of heat, calories or B.t.u. necessary to raise one gallon 1° F. with oils and distillates of different gravities, as listed?—R. L. W.**

The heating values of different petroleum products are reported in tabular form in the several reference books on petroleum and fuel oils. Space is not available for the printing of such tables here.

Heating values may be calculated from the A. P. I. gravity by means of the formula:

B.t.u. per pound = 18,650 + 40 (A.P.I. gravity — 10).

The B.t.u. per pound of 25° A.P.I. fuel oil is 19,250. From the standard tables, or by calculation from the equivalent specific gravity, the weight of this oil is 7.529 pounds per gallon, and 19,250 × 7.529 = 144,933 B.t.u. per gallon. Similar calculations for the other gravities you mention will give the required data for completing the calculation. The weight of 8.3 pounds for one gallon of water is close enough for all ordinary calculations. The B.t.u. as commonly used is the heat required to raise one pound of water 1° F.

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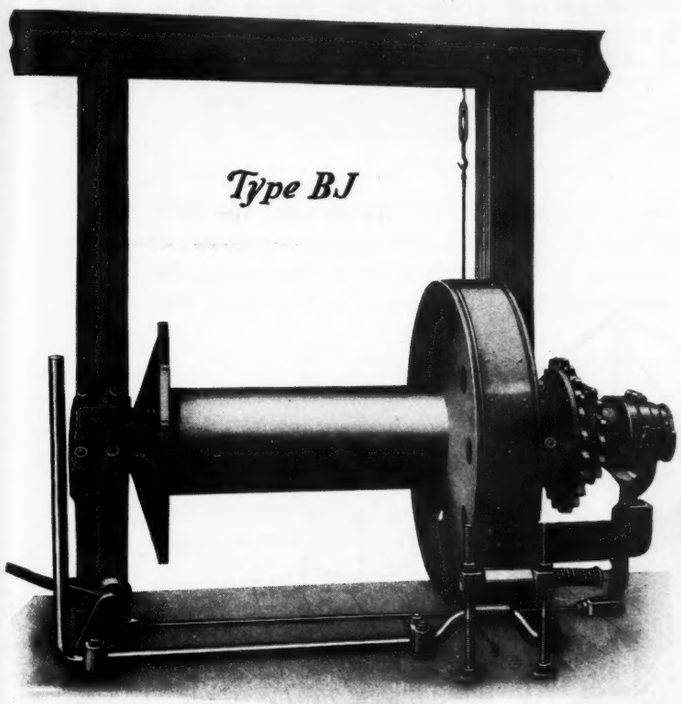


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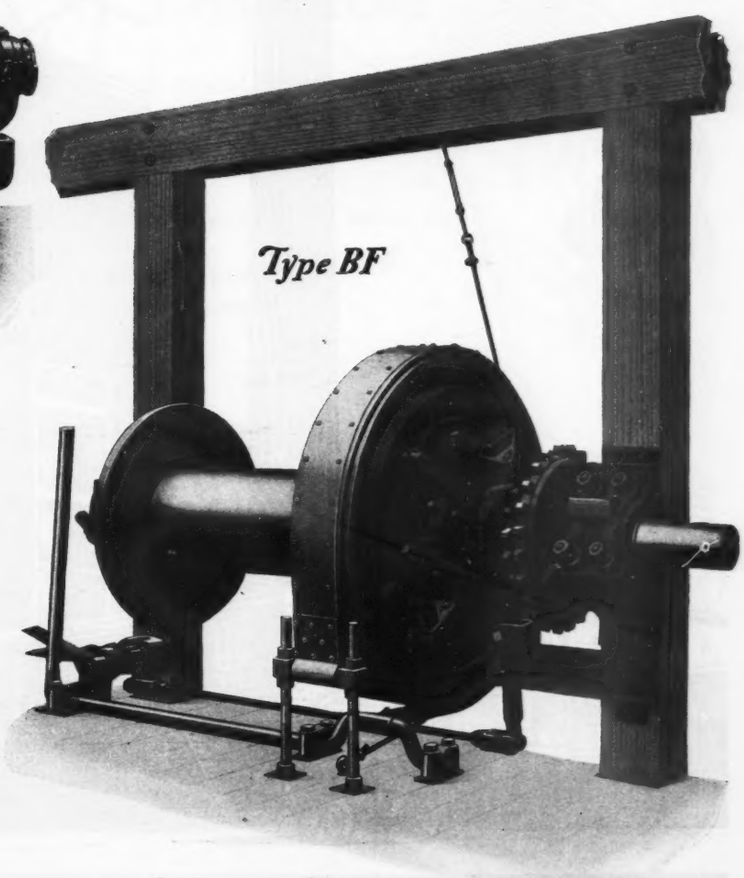


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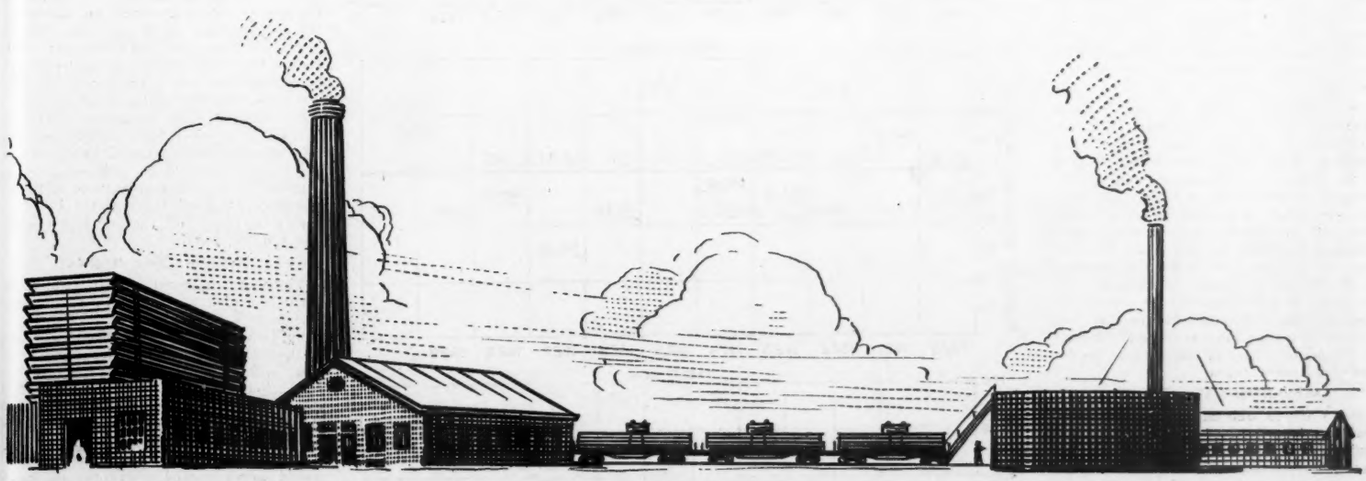

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# The Marketing of Natural Gasoline

## Why Market for This Product in Past Has Been So Erratic. Provision of More Storage Would Do Most as a Stabilizer of Industry

By W. K. Warren
Warren Petroleum Co.*

Comparatively few people either in or out of the oil industry realize the growth and advancement that has taken place during the past 15 years in the natural gasoline industry. The fact that our branch of the petroleum industry is producing today 12 per cent of the total gasoline manufactured reflects the rapid strides the manufacturers of natural gasoline have made. It is then with some apprehension that we discuss such an important phase as the marketing, or selling, of this vast amount of gasoline.

Back in 1916, some of you will remember, we had only two grades of natural gasoline. These grades were classed as raw casinghead, gravities 80-84 and 80-88, and water white. There were no other specifications. Our principal purchasers were The Texas Company and the Standard Oil of Indiana. These companies would bill their tank cars to the casinghead gasoline plants loaded with naphtha and the manufacturers would blend the casinghead and naphtha, load the cars and then ship the product to the refineries or distributing points designated. The price paid for casinghead at that time was what we considered a fair return, ranging from 26 to 32 cents per gallon with no tank car expense, outages or off specifications to consider. The plants, with a few exceptions, were what we consider today as small plants, ranging from 2,000 to 8,000 gallons per day. One of the larger manufacturers during this period was Douglas W. Franchot, now deceased, and when he began to ship casinghead in the rate state (not blended) the railroads were skeptical of its nature and thought of it as liquid dynamite, hazardous to both life and property. To convince them otherwise, Mr. Franchot bargained with the Frisco Railroad that if they would accept the shipment he would ride a tank car loaded with casinghead from his plant at Kiefer, Okla., to its destination at Neodesha, Kans.; and according to Mr. Franchot's own words he was in doubt about his safe arrival at Neodesha. However, he arrived safely and since that time there has been little difficulty in shipping casinghead, now better known as natural gasoline.

We have had several changes in specifications since 1916. About 1922 the grades were changed from A to F and again in 1926 the grades were changed to the present specifications, adding doctor and corrosion test in 1928. The largest percentage of natural gasoline manufactured is Grade AA specifications, which is probably 85 per cent; the balance, or 15 per cent, is divided between A, B, BB and C grades. Compared with the total, B and C grades are practically obsolete today. Climatic and market conditions of course play an important part in the manufacture of the various grades and their percentages.

### Why Market Was Erratic

Some of you who have been in the natural gasoline business for only a few years might wonder at times why we have not been able to maintain a higher price for our product, and why the market in the past was so erratic; and as Chic Sale's "Elmer" says "I'll tell you why." Back in the early days of 1916 manufacturing gasoline by the compression method was a small business known to only a few, while today it is a major branch of the oil industry. From the year 1916 we have had a steady increase of natural gasoline production, and like crude oil production, straightrun gasoline and other products, we have advanced at times ahead of our market consumption, which, of course, caused low prices.

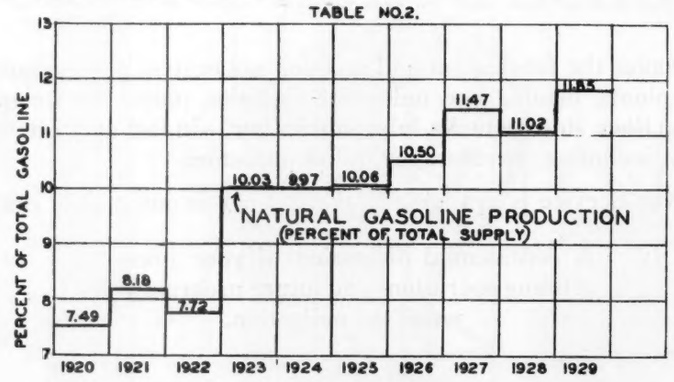
To illustrate the growth of our industry, in 1929 our total production of natural gasoline, or 52,271,000 bbls., was 10,000,000 bbls. more than our total automobile consumption of straightrun gasoline in the year 1916. Of course it is true that we have more outlets for straightrun gasoline now than we had 14 years ago, but at the same time our increases in production have at times been at such a rate that we have not been able to maintain a healthy condition in the industry. For instance, some of the manufacturers have (in years gone by) resorted to putting their production into crude oil lines for lack of a market. In the latter respect, and excepting California, we do not believe that this condition has existed with any manufacturer since March, 1928, unless it was to the buyer's advantage.

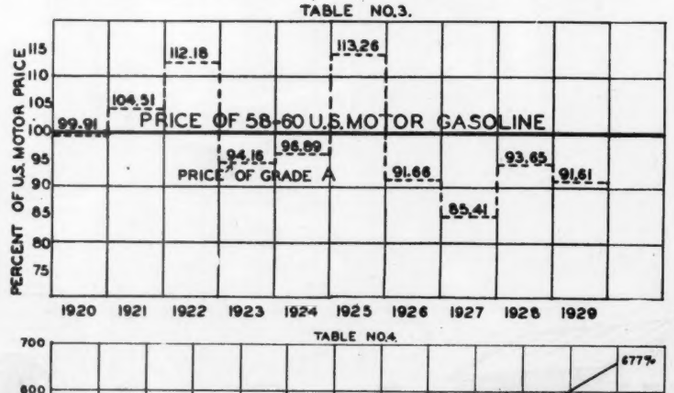
Our chief market for natural gasoline is with the refining companies that use our gasoline for blending with their products, and in as much as the refineries are able to consume only a certain quantity at a certain price, we have been forced to find other outlets. In securing other market outlets it has been necessary to change the manufacture and specifications, such as removing the lighter hydrocarbons, propane, butane, etc., and at this time results have been quite satisfactory, yet our market today for these by-products has not grown to the extent of improving the price of our regular grades of natural gasoline.

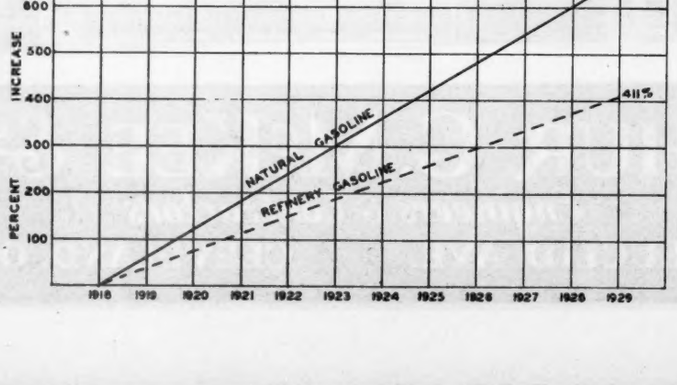
TABLE NO. 1—NATURAL GASOLINE (First Three Months)
(Thousand gallons)

| | Marketed prod. 1929 | Marketed prod. 1930 | Used at local refinery 1929 | Used at local refinery 1930 | Other uses or imports 1929 | Other uses or imports 1930 |
|---|---|---|---|---|---|---|
| Eastern | 35,016 | 31,964 | 59,388 | 65,940 | *24,372 | *33,976 |
| Okla.-Kans. | 158,557 | 156,387 | 35,070 | 50,064 | †123,487 | †106,323 |
| Texas | 88,804 | 115,821 | 93,450 | 108,444 | *4,646 | †7,377 |
| La.-Ark. | 23,126 | 28,721 | 66,402 | 54,180 | *43,316 | *25,459 |
| Rocky Mountain | 10,262 | 11,317 | 13,818 | 14,574 | *3,656 | *3,257 |
| California | 173,773 | 208,671 | 151,620 | 166,026 | †22,153 | †42,645 |
| Total | 489,538 | 552,881 | 419,748 | 459,228 | †69,790 | 93,653 |

*Imports. †Exports or other uses.




### Narrowing Outlets

About 10 years ago we shipped natural gasoline to all parts of the country, even as far as California, but in the past few years we have not only lost our business in California but California has practically eliminated our tank car movements to the eastern seaboard by its shipments of cargoes of natural gasoline to this market.

Somewhat the same condition prevails in West Virginia territory, with the exception of cargo shipments. That is to say, the West Virginia manufacturers were supplying some of the larger users before California manufacturers were shipping cargoes. Since these purchasers are buying their material almost 100 per cent from California, the West Virginia manufacturers have been forced to market their product to smaller consumers in the East, competing or underselling our Mid-Continent manufacturers. As West Virginia freight rates are much cheaper than freight rates from Mid-Continent areas, our shipments to Ohio, Pennsylvania and the eastern states have been greatly curtailed. This leaves us today with a market to foreign countries, mostly for a stabilized gasoline, a small amount of coastwise trade, the domestic refiners and jobbers in the Mid-Continent Field and Standard of Indiana territory.

We must accordingly know our potential production and see what our present market territory will absorb. Estimating a total of 60,000,000 bbls. of natural gasoline that will be manufactured and marketed by natural gasoline manufacturers in the United States in 1930, it is interesting to note that this production is divided into three main groups, i.e., the Mid-Continent, which produces the largest amount, or 53.4 per cent of the total, while California will manufacture 38.6 per cent, or the largest amount for any single state, and the balance of the country will produce 8 per cent. Having made an allowance for an increase of 9 per cent in the above figures, the Mid-Continent Field should have a production of approximately 32,040,000 bbls.; California 23,160,000 bbls. and the balance of the country 4,800,000 bbls. of natural gasoline. It might be of interest to know that this production of natural gasoline plus benzol, and 169,000,000 bbls. of gasoline supplied by cracking operations, will represent a total of 229,000,000 bbls., or nearly one-half of the country's gasoline requirements.

### Need for New Outlets

Since the natural gasoline industry furnishes such a large amount of gasoline and is such a factor in the petroleum industry, any improvement in the method of marketing or development of new outlets should be given serious consideration. Taking into consideration then the domestic refiner we find that there are many refiners today who would use increased quantities of our product if they were assured that the material would never exceed a certain price delivered at their plant. However, since the law of economics must prevail, no manufacturer desires to guarantee the refiner an absolute profit with perhaps a loss to the manufacturer.

The value of natural gasoline, of course, varies with the exporter and the domestic refiner and while the former can afford to pay more for our product, it must be kept in mind that the price the domestic refiner can consistently afford to pay is the price that should prevail, for it is the domestic refiner who pur-

(Continued on Page 137)

*Before Natural Gasoline Association of America, Tulsa, May 20-22.

# ESSEMER
## E-10 POWER CYLINDER

5. Increased inlet port capacity permits more complete scavenging.

6. Water jacket the full length of power cylinder improves water circulation.

7. Increased exhaust port capacity permits more complete scavenging.

8. 50% greater capacity in air valve provides a higher per cent of pure air for combustion.

YOU can judge the thoroughness of engineering in an oil field engine by the operation of the power cylinder.

No engine can carry its rated load without sufficient cooling and proper lubrication. The efficiency of the engine is greatly impaired if the exhaust and inlet port capacities are inadequate. The engine cannot develop its full horsepower without thorough scavenging.

Check these points on the New Type-10 and you will find that it "measures up." That's why it is the leader in its class of medium size two-cycle compressors.

**The Cooper-Bessemer Corporation**

Formerly The C. & G. Cooper Co. and The Bessemer Gas Engine Co.

Mount Vernon, Ohio Grove City, Pa.

*Branch offices in all principal oil and gas fields*

# Capacity Nears Ten Million Gallons

## Daily Potential of Natural Gasoline Plants in United States Continues to Increase Rapidly. Special Products Important

By C. O. Willson

The plant capacity of the natural gasoline industry in the United States is rapidly approaching 10,000,000 gallons daily. Figures on a basis of $50 per gallon capacity and the indicated investment in the youngest branch of the oil business is now close to $500,000,000.

The foregoing is based on the growth in natural gasoline manufacture shown in The Oil and Gas Journal's annual survey which is published complete in this issue. The survey which was completed as of May 1 lists 1,071 natural gasoline plants scattered throughout the oil fields in the United States with a total capacity of 9,542,020 gallons daily. This shows a decrease of 53 in the number of plants but an expansion of 846,293 gallons daily in capacity when compared with the data for May 1, 1929. Should the expansion in the coming year continue at the same rate the 10,000,000 mark in daily capacity will be passed before the end of the year.

In general the data compiled in this year's survey show the same trends as during the two previous years. The number of plants is decreasing but the total capacity is rapidly increasing. The gain in total capacity has been consistent from year to year since natural gasoline became important commercially in the oil business starting about 1913.

As in 1929 and 1928 a number of plants were shut down during the past year. In most cases they were of small capacity and were located in old fields where the gas supplies had decreased to the point where profitable operation was impossible.

The building of new plants in flush areas more than offset this decrease. While plants of a few gallons to 5,000 gallons daily capacity in old pools were being dismantled, large units with a capacity in excess of 100,000 gallons in a few cases have been built so there has not been a decline in any of the larger producing states.

### Actual Output

In any statistical study of the natural gasoline situation it should be kept in mind that data on capacities do not in many cases reflect actual consumption. The monthly reports of the Bureau of Mines show that last year the maximum natural gasoline production was obtained in October when the daily output was 6,700,000 gallons. The government figures do not include the output of some of the smaller manufacturers but it is certain that the daily output over a monthly period never reached 7,000,000 gallons.

Thus the plants for the entire United States did not exceed 75 per cent of the potential capacity. For all of 1929 the Government's report showed a production of 2,195,400,000 gallons or 6,000,000 gallons daily. This compared with a total of 1,777,700,000 gallons for 1928 or a daily average of 4,900,000 gallons.

The latest report of the Bureau of Mines covered operation for March of this year. This report showed a daily output of 6,200,000 gallons. The production has declined since the latter part of 1929 due largely to the curtailment programs now in effect in several of the new fields both in the Mid-Continent and California. These programs have materially reduced the quantity of casinghead gas available at several plants in the Los Angeles Basin and for a time was an important factor in the Greater Seminole area of Oklahoma and the Panhandle of Texas. It is also tending to hold back development in some of the newer pools which otherwise would be more active in the construction of new plants.

### Rating Capacities

In regard to rated capacities, probably none of the major manufacturers would agree as to just how this should be done. In several cases the companies state that it is impossible to rate capacities as is done in petroleum refining and they report their actual output. A number of companies pursued this policy in making out their reports for this year's survey.

Other companies prefer to rate gallonage on a basis of cubic feet of gas. This method does not indicate the output of the plants, however, for the gasoline content of the casinghead gas will vary from a small fraction of a gallon to several gallons per 1,000 cubic feet.

In order to secure uniformity in capacities all companies were asked to report potential daily production in gallons. In many cases the plants were actually producing less than 50 per cent capacity. This is usually due to a declining gas

### Growth of Natural Gasoline Industry

(Compiled by the Natural Gasoline Department of The Oil and Gas Journal)

| | No. of plants | Daily capacity (gallons) |
|---|---|---|
| 1930 | 1,071 | 9,542,020 |
| 1929 | 1,124 | 8,695,727 |
| 1928 | 1,229 | 7,865,652 |
| 1927 | 1,148 | 6,947,264 |
| 1926 | 1,063 | 5,121,000 |
| 1925 | 1,143 | 4,642,561 |
| 1924 | 1,012 | 3,396,961 |

### Natural Gasoline Plant Capacities By States

| | May 1, 1930 — No. of plants* | May 1, 1930 — Daily capacity | May 1, 1929 — No. of plants* | May 1, 1929 — Daily capacity |
|---|---|---|---|---|
| Arkansas | 11 | 106,500 | 14 | 115,722 |
| California | 146 | 3,192,907 | 159 | 2,807,525 |
| Colorado | 2 | 3,600 | 2 | 11,000 |
| Illinois | 78 | 55,313 | 74 | 49,837 |
| Kansas | 24 | 220,800 | 27 | 189,150 |
| Kentucky | 8 | 44,550 | 12 | 40,100 |
| Louisiana | 43 | 331,750 | 46 | 333,785 |
| New Mexico | 1 | 9,000 | 1 | 9,000 |
| New York | 3 | 1,300 | 4 | 2,250 |
| Ohio | 28 | 63,637 | 33 | 65,560 |
| Oklahoma | 283 | 2,839,693 | 303 | 2,666,677 |
| Pennsylvania | 144 | 116,169 | 160 | 130,351 |
| Texas | 155 | 2,018,767 | 150 | 1,734,325 |
| West Virginia | 136 | 406,874 | 130 | 403,985 |
| Wyoming | 9 | 130,460 | 9 | 136,460 |
| Total | 1,071 | 9,542,020 | 1,124 | 8,695,727 |

*Includes few plants temporarily shut down.

### Natural Gasoline Plant Capacity by Divisions

(May 1, 1930)

| | No. of plants | Daily capacity (gallons) |
|---|---|---|
| California | 146 | 3,192,907 |
| Mid-Continent (Oklahoma, Kansas, Texas, Arkansas, Louisiana) | 516 | 5,517,710 |
| East of Mississippi | 397 | 687,843 |
| Rocky Mountains | 12 | 143,560 |
| Total | 1,071 | 9,542,020 |

# Natural Gasoline Plants By States

Abbreviations: Oil absorption, absp.; compression, comp.; oil absorption and compression, A-C. All capacities given in gallons per day. *Shut down.

## COMPILED BY THE OIL AND GAS JOURNAL

### ARKANSAS

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Arkansas Natural Gas Corp., El Dorado | El Dorado | C-A | 7,500 |
| Arkansas Natural Gas Corp., Louann | Louann | Absp. | 10,000 |
| Gulf Refining Co., El Dorado | El Dorado | C-A | 1,500 |
| Henderson Co., El Dorado | Sec. 8-18s-15w, Union County | Absp. | 12,000 |
| Lisbon Gasoline Co., El Dorado | Sec. 9-17s-16w | Absp. | 4,500 |
| Magnolia Petroleum Co., El Dorado | Sec. 8-15-16, Union County | Absp. | 8,000 |
| Rainbow Gasoline Corp., El Dorado | Sec. 28-17s-14, Union County | Absp. | 13,000 |
| Reserve Petroleum Co., Box 9, Louann | Sec. 30-15-16, Ouachita County | Absp. | 15,000 |
| Simms Oil Co., Smackover | Smackover | Comp. | 9,000 |
| Standard Oil Co. of Louisiana, El Dorado | El Dorado Field | C-A | 24,500 |
| Standard Oil Co. of Louisiana, Smackover | Smackover Field | C-A | 1,500 |

### CALIFORNIA

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Bankline Oil Co., 111 W. Seventh St., Los Angeles | Signal Hill | Absp. | 40,000 |
| Barnsdall Oil Co. of California, 1214 Commercial Exchange Bldg., Los Angeles | Doty farm, Elwood | Absp. | 65,000 |
| Beirdge Oil Co., 1106 Bank of Italy Bldg., Los Angeles | Sec. 34s, Elk Hills | Absp. | 7,000 |
| Beirdge Oil Co., 1106 Bank of Italy Bldg, Los Angeles | Lost Hills | Absp. | 5,000 |
| Beirdge Oil Co., 1106 Bank of Italy Bldg, Los Angeles | Lost Hills | Comp | 5,000 |
| Brea Canyon Oil Co., 831 Standard Oil Bldg., Los Angeles | Coyote Hills Field | Comp. | 5,000 |
| California United Gasoline Corp., 500 C. C. Chapman Bldg., Los Angeles | Johnson Lease, Santa Fe Springs | Absp. | 30,000 |

### CALIFORNIA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| California United Gasoline Corp., 500 C. C. Chapman Bldg., Los Angeles | Riverside | Absp. | 10,000 |
| Calumet Oil Co., Fillmore | Sec. 3-3-19 | Comp. | 750 |
| Coline Gasoline Corp., 319 Kerckhoff Bldg., Los Angeles | Sec. 16-4s-14w, Los Angeles County, Torrance Field | Absp. | 10,000 |
| Coline Gasoline Corp., 319 Kerckhoff Bldg., Los Angeles | Sec. 16-3n-24w, Ventura County, Rincon Field | Absp. | 6,000 |
| Cowan Oil & Refining Co., Sixth and Spring Streets, Los Angeles | Rosecrans | C-A | 10,000 |
| Export Refining Corp., 1022 Board of Trade Bldg., Los Angeles | C.C.M.O. lease, Torrance Field | Absp. | 20,000 |
| Field, O. C., Gasoline Corp., 609 Board of Trade Bldg., Los Angeles | Huntington Beach | Absp. | 30,000 |
| Field, O. C., Gasoline Corp., 609 Board of Trade Bldg., Los Angeles | Huntington Beach | Absp. | 6,000 |
| Field, O. C., Gasoline Corp., 609 Board of Trade Bldg., Los Angeles | Maricopa | Absp. | 6,000 |
| Fullerton Oil Co., Fullerton | Sec. 2-3-10w, Orange County | C-A | 4,000 |
| General Petroleum Corp., Santa Fe Springs | Santa Fe Springs | Absp. | 190,000 |
| General Petroleum Corp., Ventura | Ventura | Absp. | 45,000 |
| General Petroleum Corp., Alamitos Heights | Signal Hill | Absp. | 35,000 |
| Getty, George F., Gasoline Co., Box 715, Santa Fe Springs | Sec. 3-5s-12w, Seal Beach Field | Absp. | 10,000 |
| Gilmore Gasoline Plant No. 1, Walnut Avenue and Hill Street, Long Beach | Sec. 30-4s-12w | Absp. | 30,000 |

(Continued on Page 191)

supply forcing the plants to produce only a fraction of the potential capacity.

The trend in modern plants is toward flexible construction so that the capacity can be decreased as the gas supplies decline by the removal of equipment to new plants. Several of the major companies have perfected this method of operation so that their plants are always operating near capacity. This plan, however, is not feasible for many small and large operators who do not have the steady expansion in new fields to keep their old equipment in use at all times. It is due to this fact that many 5,000 to 30,000-gallon plants in the Mid-Continent are now only producing from 10 to 50 per cent of their capacity established when large flush gas supplies were available.

### Three States

The three states which are the largest producers of natural gasoline—California, Oklahoma and Texas—also lead in increased capacity over the past year. These three states whose natural gasoline plants have 75 per cent of the total capacity of all the states, added 842,840 gallons to their capacity during the past year. This was approximately equal to the total increase in all states showing that in the remaining fields the losses about offset the gains.

### California

California, as was the case last year, led in increased capacity with a gain of 385,382 gallons or 14 per cent although the number of its plants decreased from 159 to 146. The greater part of the gain was in the fields of Los Angeles Basin. The discovery of deep sand production in that area in 1929 led to a rapid expansion in natural gasoline plant facilities which carried over into the latter part of 1929. Old plants which had processed gas coming from shallower sands for several years were enlarged to take care of a greater volume usually richer in gasoline content and many new plants were built. Several of these plants have a capacity in excess of 100,000 gallons daily and at least two plants during the peak period produced approximately 200,000 gallons each.

The Elwood Field producing from a shallower sand also has furnished gas for new plants construction. A drastic crude oil production curtailment which first became effective the latter part of 1929 stopped expansion programs and a number of plants since that time have been operating part capacity.

The Kettleman Hills area appears to offer the greatest promise for new plant construction in the immediate future. Four plants have been completed in that area. The first wells usually had a large volume of gas and this production at present exceeds the available plant capacity.

Due to the overproduction from wells already completed in other fields new drilling is discouraged in the new field with agreements among the larger operators which may hold back development for a period of two or more years. Those familiar with the Kettleman Hills situation believe that the field will eventually bring a large natural gasoline production offsetting any decline in the older pools.

Texas led Oklahoma in the increased capacity of its plants. The Lone Star State with an increase from 150 to 155 in number of plants added 284,442 gallons daily to its daily capacity.

The bulk of this increase was due to the development in Gray County of the Texas Panhandle. There was also some expansion in the adjoining counties of Carson and Hutchinson. The Gray County crude oil production has generally been accompanied with a large flow of rich gas. Several new plants were built, one with a capacity of 75,000 gallons daily being the largest in the State.

This field has not been so active since the first of year so far as new plant construction is concerned and new fields will be necessary if the growth of the past year is to be duplicated. Several plants were built at scattered points in North, Central and West Texas fields. In two cases these ventures were disappointments, the gas supply falling off rapidly. The latest plant to be announced is to be located in the new Ector County Field.

### Fewer Plants in Oklahoma

Oklahoma which stills ranks second in total capacity was third in gains for the past year. The number of plants in the State continued to decrease, 283 being listed as of May 1 compared to 303 on May 1 of last year. On May 1, 1927, the State had 322 plants.

The capacity of the Oklahoma plants increased from 2,666,677 gallons daily on May 1 of last year to 2,839,693 gallons on the same date this year, an increase of 173,016 gallons. Most of the plants that were dismantled last year were small units which had been in operation for several years. However, there were some consolidations in the newer pools as in the Greater Seminole area. The past year saw the latter area pass the peak in natural gasoline with an actual production at one time of approximately 1,250,000 gallons daily.

The production of the older pools in that area has shown a steady decline and proration agreements have also tended to limit the gas supply. There is still some plant construction under way due to the extension of pools and it is certain that the Greater Seminole section will continue to be the largest producer of natural gasoline in the Mid-Continent Field throughout the year. In the older areas where the wells are now pumping the gas has a high gasoline content so that a large settled production is assured.

### Oklahoma City

The Oklahoma City development was responsible for practically all of the increase of the past few months. Approximately 225 wells have been completed in that field. Most of the wells have been completed since the first of the year. The gasoline content of the gas from these wells is small being 1 gallon or less per 1,000 cubic feet. The volume is exceptionally large most of the wells showing an initial gas flow of several million feet daily with a record flow from one well estimated at 300,000,000 cubic feet.

The fact that there has not been a market for all of the crude oil production has resulted in a curtailment program which has been reflected in the

(Continued on Page 129)

## AMONG THE LARGER MANUFACTURERS

**The Phillips Petroleum Co. retains its position as the largest manufacturer of natural gasoline. As of May 1 this year's survey shows that the company has 44 plants with a daily capacity of 1,163,000 gallons daily. This is more than double the rated capacity of any other company. Since May 1 additional plants have been announced for the Oklahoma City Field and Ector County, Texas. All plants are located in the Mid-Continent Field.**

**The Phillips company's closest competitor is the Standard Gasoline Co., a subsidiary of the Standard Oil Co. of California. The company has 39 plants with a capacity of 508,750 gallons daily in California.**

**The Sinclair Oil & Gas Co. has 16 plants in Oklahoma and Kansas with a rated capacity of 403,000 gallons daily. It is the largest natural gasoline manufacturer in Oklahoma.**

**The Shell Oil Co. of California and the Shell Petroleum Corp., both subsidiaries of Dutch Shell interests, are third in capacity when considered as one unit. The California company has six plants with a daily capacity of 256,000 gallons and the Shell Petroleum Corp., operating in the Mid-Continent Field, has 14 plants with a capacity of 183,000 gallons daily. The companies operate separately in both the manufacture and sale of natural gasoline.**

**The same situation applies to The Texas Company of California and The Texas Company of Delaware. The latter company in the Mid-Continent has 19 plants with a capacity of 178,600 gallons daily and the California company has 13 plants with a capacity of 367,500 gallons.**

**Among the other large manufacturers are Empire Oil and Refining Co., Skelly Oil Co., Union Oil Co., Magnolia Petroleum Co., General Petroleum Corp., Signal Hill Gasoline Co., Gulf Companies, and Norwalk Oil Co.**

**East of the Mississippi River the Hope Construction & Refining Co. leads with 44 plants having a capacity of 294,700 gallons daily. The Virginia Gasoline and Oil Co. is second, its 19 plants having a capacity of 204,700 gallons.**

**Among the newcomers the Indian Territory Illuminating Oil Co. expansion is outstanding. The five plants in the Oklahoma City Field which it either owns or controls have a capacity of 145,000 gallons daily.**

# Personnel of Natural Gasoline Industry

**Following is a list of companies operating one or more natural gasoline plants. The data include name of company, general office address, total number of plants, total capacity and personnel. A list of plant superintendents including a number of chief chemists and chief engineers will be found on page 134.**

**The list does not include a few companies which do not report their personnel. Most of these companies are small manufacturers who do not maintain distinct organizations for the operation of their plants. The names of these companies and capacities of their plants will be found in that part of the survey which gives a list of plants by states.**

## COMPILED BY THE OIL AND GAS JOURNAL

| Company and general office address— | No. plants | Daily cap'y. gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| Akin Gasoline Co., 1801 Exchange Natl. Bank Bldg., Tulsa | 2 | 2,000 | J. H. McCoy | J. D. Dinsmoor* | L. E. Dinsmoor | H. R. Johnson | A. J. Pfister | | W. S. Cox |
| Altitude Petroleum Corp., 814 Kennedy Bldg., Tulsa | 1 | 5,000 | I. Arthur Anson | M. L. Freese | M. E. Silverman | M. L. Freese | C. H. Warner | F. R. James | K. Koppel |
| Alum Rock Gas Co., National Transit Bldg., Oil City, Pa. | 1 | 200 | R. P. Stevens | C. I. Crippen | T. H. Wight | C. R. Beddows | J. H. Isherwood | | Roy Klinger |
| Amerada Petroleum Corp., 65 Broadway, New York, N. Y. | 9 | 77,000 | A. Jacobsen | A. M. Blow | Robert Nock | Robert Nock | | M. E. Mockley | Guy W. Edmunds |
| American Oil Development Co., Oliver Bldg., Pittsburgh, Pa. | 8 | 2,810 | Theodore A. Tack | Harry S. Tack | Willis H. Siegfried | Augustus V. Tack | | John Hayes | |
| Arab Gasoline Corp., Eastland, Tex. | 1 | 25,000 | Samuel Butler | P. T. Sharples | W. E. Cox | W. E. Cox | K. B. Tanner | Franklin Dwyer | K. B. Tanner |
| Arkansas Natural Gas Corp., Ardis Bldg., Shreveport, La. | 7 | 40,000 | Henry L. Doherty | D. W. Harris* | E. N. Watkins | B. R. Muirhead | G. L. Gano | H. R. Dickerson | W. D. Martin |
| Associated Producers Co., 11 Broadway, New York, N. Y. | 1 | 1,300 | M. P. Williams | Robert McKelvy | G. A. Reid | F. A. Marsellus | | W. S. Corwin | C. H. Bickell |
| Atlas Oil Co., Main St., Clarion, Pa. | 1 | 100 | Not incorporated | | | | | | Abe Kaufman |
| Bankline Oil Co., 111 W. Seventh St., Los Angeles, Calif. | 1 | 40,000 | John Barneson | H. J. Barneson | W. E. Kropp | | | F. L. Tobias | H. M. Paulsen |
| Barco Gasoline Co., Alhambra Bldg., Tulsa | 1 | 2,000 | Thomas Chestnut | R. A. Koons | J. L. Goddard | M. F. Powers | | J. H. Archer | |
| Barnsdall Oil Co., Petroleum Bldg., Tulsa | 9 | 85,000 | E. B. Reeser | R. F. MacArthur* | James A. Dunn | L. D. Messner | J. C. Evans | A. J. Schlosser | O. E. McClatchey |
| Barnsdall Oil Co. of California, Commonwealth Exchange Bldg., Los Angeles, Calif. | 1 | 65,000 | R. A. Broomfield | F. A. Fortine | E. C. Reed | | | O. Weaver | Carl Good |

(Continued on Page 116)

# Personnel of Natural Gasoline Industry

| Company and general office address— | No. plants | Daily cap'y. gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| Bartlett Gasoline Co., New Wright Bldg., Tulsa | 1 | 10,000 | J. H. McCoy | Dean E. Foster | H. R. Johnson | H. R. Johnson | A. J. Pfister | | |
| Bartoe, Harry T., Petrolia, Pa. | 1 | 25 | Harry T. Bartoe | Harry T. Bartoe | Harry T. Bartoe | | Harry T. Bartoe | | Harry T. Bartoe |
| Bell Oil & Gas Co., Kennedy Bldg., Tulsa | 7 | 61,500 | S. L. Lubell | Mark Finston* | Albert Finston | J. J. Lubell | Albert Finston | | C. E. Cadieux |
| Berry, Pryor, Petrolia, Pa. | 1 | 20 | | | | | | | |
| Big Lake Oil Co., 223 Fourth Ave., Pittsburgh, Pa. | 1 | 25,000 | Levi Smith | A. B. Daly, Jr.* | W. E. Huston | J. G. Farquhar | | L. G. Thompson | W. M. Griffith |
| Brady, E. D., Tulsa | 1 | 250 | | | | | | | |
| Breckenridge Gasoline Co., 2313 Madison Ave., Toledo, Ohio | 1 | 6,000 | A. S. Close | John G. Dorn | A. S. Hickok | A. S. Hickok | | R. L. Ponsler | |
| Brenneman & MacDonnell, 312 S. Colo St., Lima, Ohio | 2 | 1,250 | Co-Partnership | | | | | E. R. Perfect | |
| Brooks & Hanlon, Inc., Seventh & Cheyenne Sts., Tulsa | 1 | 32,000 | E. I. Hanlon | T. K. Smith | J. H. Boyle | D. E. Buchanan | A. F. Wood | G. E. Yonker | |
| Bruner, A., & Co., 312 Wright Bldg., Tulsa | 1 | 200 | A. Bruner | | | A. Bruner | A. Bruner | A. Bruner | A. Bruner |
| Bryan, Phelps & Ilseng, Shamrock, Tex. | 1 | 8,000 | Frank Phelps | Thomas Bryan | | Thomas Bryan | | Thomas Bryan | |
| California United Gasoline Corp., 500 C. C. Chapman Bldg., Los Angeles, Calif. | 3 | 50,000 | E. E. Peacock | Frank Kuhry | L. M. Harlow | L. M. Harlow | E. E. Peacock | Ralph P. Dudley | E. E. Peacock |
| Calumet Oil Co., 517 I. W. Hellman Bldg., Los Angeles, Calif. | 1 | 750 | J. E. Wallis | T. H. Collins* | W. F. Staunton | W. F. Staunton | | J. C. Armstrong | |
| Canadian River Gas Co., Independence, Kans. | 1 | 10,000 | W. S. Fitzpatrick | A. R. Jones | Victor A. Iobe | W. V. Heckman | | G. A. Woods | |
| Cannon Gasoline Co., Box 963, Amarillo, Tex. | 1 | 5,000 | J. J. Hastings | F. J. Storm | J. B. Dooly | F. J. Storm | F. J. Storm | J. J. Hastings | F. J. Storm |
| Canonsburg Iron & Steel Works, Canonsburg, Pa. | 1 | 350 | E. W. Edwards | D. M. Stembel | E. G. Haines | E. G. Haines | J. R. Leonard | | J. R. Leonard |
| Carbide & Carbon Chemicals Corp., 30 E. 42d St., New York, N. Y. | 3 | 15,000 | J. A. Rafferty | H. E. Thompson* | A. C. Cornell | E. T. Ayres | R. W. White | J. W. McLaughlin | J. B. Hufford |
| Carnegie Natural Gas Co., Frick Annex Bldg., Pittsburgh, Pa. | 7 | 5,598 | S. W. Meals | | James J. Campbell | H. E. Jeffries | | John Glass | |
| Carson Carbon Co., 432 New St., Cincinnati, Ohio | 1 | 500 | J. B. Hawley | Bromwell Ault | H. A. Vance | H. A. Vance | | C. V. Teegerstrom | |
| Carter Oil Co., Exchange Bank Bldg., Tulsa | 8 | 258,500 | R. M. Young | W. T. Funk* | J. L. Cluley | J. L. Cluley | J. R. Freeman | G. E. Edgett | B. Gooderham |
| Casto Oil Co., St. Marys, W. Va. | 1 | 250 | Partnership | | | | | Ira Williams | Ira Williams |
| Chestnut & Smith Corp., Chestnut & Smith Bldg., Tulsa | 9 | 120,500 | Thomas Chestnut | A. F. Garrett | A. D. Blackard | C. P. Quinlan | C. W. Anderson | F. G. Yonkers | A. C. McCurdy |
| Clinger Oil & Gas Co., Tidioute, Pa. | 2 | 1,600 | Co-partnership | | | W. F. Clinger | | W. F. Clinger | |
| Cochran, John G., & Co., 676 Main St., Sheffield, Pa. | 1 | 700 | John G. Cochran, manager | | | | | | |
| Cockrell-McIlroy Oil Co., Amarillo Bldg., Amarillo, Tex. | 1 | 3,000 | S. D. McIlroy | W. W. McIlroy | Geo. W. Pennington | Geo. W. Pennington | | L. W. Cook | H. F. Allspaugh |
| Coline Gasoline Corp., 301 Kerckhoff Bldg., Los Angeles, Calif. | 2 | 16,000 | J. H. Keefe | F. C. Ripley | | | | H. E. Moulton | |
| Colonial Oil Co., 402 Severy St., Parkersburg, W. Va. | 1 | 200 | | H. L. Stout | B. Ferrell | M. H. Goodkind | | W. P. Rankin | |
| Colexo Corp., 45 E. 42d St., New York, N. Y., and Monroe, La. | 2 | 62,000 | F. F. Curtze | | R. L. Carr | G. L. Bubb | W. H. Anders | W. E. Reardon | W. E. Reardon |
| Columbian Gasoline Corp., 45 E 42d St., New York, N. Y., and Monroe, La. | 6 | 78,000 | F. F. Curtze | | R. L. Carr | G. L. Bubb | W. H. Anders | W. E. Reardon | W. E. Reardon |
| Comar Gasoline Co., Shell Bldg., St. Louis, Mo. | 2 | 28,000 | T. F. Lydon | E. J. Nicklos | P. R. Chenoweth | P. R. Chenoweth | L. van Eeghen | S. S. Smith | C. B. Singleton |
| Comar Oil Co., Shell Bldg., St. Louis, Mo. | 2 | 13,500 | U. deB. Daly | T. F. Lydon | P. R. Chenoweth | T. F. Lydon | L. van Eeghen | S. S. Smith | C. B. Singleton |
| Consolidated Gasoline Co., 2313 Madison Ave., Toledo, Ohio. | 1 | 8,000 | Charles B. Eddy | A. S. Hickock | A. S. Close | A. S. Hickok | | R. L. Ponsler | |
| Continental Oil Co. (Delaware), Ponca City, Okla. | 7 | 18,800 | D. J. Moran | W. W. Bruce* | W. W. Bruce | G. F. Smith | H. J. Kennedy | J. L. Hill | W. H. O'Connor |
| Cook Oil Lease, Kelletville, Pa. | 1 | 500 | E. S. Collins, owner | | | | | | |
| Cosden Oil Co., Electric Bldg., Fort Worth, Tex. | 1 | 8,000 | J. S. Cosden | A. G. Reed | J. E. Whitney | J. E. Whitney | R. N. Cline | Tom Bryan | Earl Brogden |
| Cowan Oil & Refining Co., 303 Fidelity Bldg., Los Angeles, Calif. | 1 | 10,000 | John A. Arnold | W. G. Howard | W. G. Howard | | | A. Holden | |
| Crosbie & Moran, Inc., 1810 Exchange Bank Bldg., Tulsa | 4 | 40,000 | J. E. Crosbie | W. B. Moran | M. E. Church | | | F. M. Nealy | A. W. Divan |
| Crosbie, Porter & Martin, Inc., 402 Thompson Bldg., Tulsa | 2 | 22,000 | J. E. Crosbie | R. B. Martin | J. A. Porter | J. A. Porter | | A. G. W. Biddle | |
| Cumberland Gasoline Corp., 1524 Hanna Bldg., Cleveland, Ohio | 1 | 4,500 | M. A. Monaghan | M. H. Rourke | Carl J. Weideman | Carl J. Weideman | J. G. Swartz | J. G. Swartz | J. G. Swartz |
| Daugherty, C. R., & Co., Y.M. C.A. Bldg., Butler, Pa. | 3 | 155 | C. R. Daugherty and | M. G. Daugherty, | partnership | | | | |
| Desdemona Gasoline Co., 407 Capps Bldg., Fort Worth, Tex. | 1 | 5,000 | L. E. Hirt | | J. B. Anderson | W. F. MacDermitt | | I. N. Williams | J. E. Anderson |
| Devonian Oil Co., 618 Exchange Natl. Bank Bldg., Tulsa | 3 | 28,000 | J. H. Evans | A. W. Leonard* | George D. Foster | L. C. Ritts | | E. S. Calvert | H. R. Dean |
| Dewey Portland Cement Co., 301 Mutual Bldg., Kansas City, Mo., | 1 | 1,500 | F. E. Tyler | D. M. Tyler | R. W. Moore | W. E. Tyler | W. M. Shepard | D. M. Tyler | P. P. Chamberlain |
| Dinsmoor & Co., 702 Second St., St. Marys, W. Va. | 1 | 750 | J. D. Dinsmoor | L. E. Dinsmoor* | W. P. Kerwood, Jr. | W. P. Kerwood, Jr. | | D. H. Israel | W. P. Kerwood, Jr. |
| Dinsmoor Oil Co., Second St., St. Marys, W. Va. | 2 | 150 | J. D. Dinsmoor | F. K. Sellers | L. E. Dinsmoor | L. E. Dinsmoor | | Henry Lane | |
| Dixie Oil Co., Inc., Philcade Bldg., Tulsa | 1 | 10,000 | F. O. Prior | A. M. McCorkle* | A. M. McCorkle | A. M. McCorkle | A. M. McCorkle | F. O. Prior | R. B. Rice |
| Dixon Creek Oil Co., Amarillo Bldg., Amarillo, Tex. | 1 | 15,000 | S. D. McIlroy | W. W. McIlroy | G. W. Pennington | G. W. Pennington | H. Rabin | C. H. Hunter | G. H. McGrath |
| Eagle-Picher Lead Co., 134 N. La Salle St., Chicago, Ill. | 1 | 2,500 | A. E. Bendelari | Fred. Hertenstein | Joseph Hummel, Jr. | E. B. Overbeck | W. N. Corbet | W. N. Corbet | W. N. Corbet |
| East Ohio Producing & Refining Co., 1405 E. Sixth St., Cleveland, Ohio | 1 | 6,000 | R. W. Gallagher | Christy Payne | R. W. Brink | R. W. Brink | | J. G. Hanks | George H. Horsley |
| Elm Oil Co., Chestnut & Smith Bldg., Tulsa | 1 | 300 | C. P. Quinlan | A. D. Blackard | J. L. Goddard | J. L. Goddard | | | |
| Empire Gas & Fuel Co., Ltd., Wellsville, N. Y. | 1 | 200 | Harry Bradley | | | George H. Bradley | | | |
| Empire Oil & Refining Co., Bartlesville, Okla. | 19 | 277,500 | H. L. Doherty | H. R. Straight | C. E. Murry | R. L. Morton, Jr. | S. B. Crooks | G. M. Davidson | G. A. Tompson |
| Enfisco Oil Corp., 214 Court Arcade Bldg., Tulsa | 2 | 5,000 | Edwin N. Fischer | Joseph F. Dittman* | M. Jerome Fischer | Larry J. Margulies | William H. Hiler | William H. Hiler | William H. Hiler |
| Equitable Gas Co., 435 Sixth Ave., Pittsburgh, Pa. | 2 | 7,600 | F. R. Phillips | F. F. Schauer | W. B. Carson | C. J. Braun, Jr. | | | C. W. Lepper |
| Federal Oil & Gas Co., 109 N. Union St., Akron, Ohio | 3 | 500 | Frank B. Many | L. M. Pettit* | C. F. Schnu | E. B. Gill | Charles W. Heasley | Charles W. Heasley | Chas. W. Heasley |
| Field, O. C., Gasoline Corp., 609 Board of Trade Bldg., Los Angeles, Calif. | 2 | 36,000 | O. C. Field | W. G. Metson | Newton J. Hale | R. B. Hale | | J. C. Burks | |
| Fleming, J. E., Titusville, Pa. | 1 | 400 | J. E. Fleming, owner | | | | | | |
| Fullerton Oil Co., R.F.D. No. 3, Box 72, Fullerton, Calif. | 1 | .... | W. L. Valentine | W. F. Ball | H. F. Severns | W. L. Valentine | | | |

(Continued on Page 120)

# Heavy Corrosion Tax

## consider *time-proved* Armco INGOT IRON

YOU need not go on paying exorbitant tribute to corrosion. Those all-too-frequent repairs and replacements of sheet and plate equipment can be considerably decreased with Armco INGOT IRON, the durable, inexpensive metal.

Here is the uniform pure iron, *proved* by twenty-three years of satisfying performance under severe conditions . . . a metal with the longest record of *actual service* of any low-cost, rust-resisting sheets and plates made.

Guesswork and speculation are banished when you use Armco INGOT IRON; for you know beforehand that your costly equipment will return a profitable measure of service.

There is an engineer in the office nearest you who is ready to investigate your metal problems. He will study your requirements and recommend grades, gages, sizes and quantities of material needed. Call him in. There is no obligation.

*Back of this familiar symbol is nearly thirty years' experience in the manufacture of special analysis iron and steel sheets and plates. When you want a rust-resisting, low-cost metal be sure to see this triangle and the words, "Armco INGOT IRON." It is your assurance of dependable, economical service.*

ROLLING MILL COMPANY
Middletown, Ohio
International Corporation

New York Pittsburgh San Francisco Houston
Philadelphia St. Louis Tulsa

ARMCO

"BE SURE IT'S MADE OF ARMCO INGOT IRON"

# Personnel of Natural Gasoline Industry

| Company and general office address— | No. plants | Daily cap'y. gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| General Petroleum Corp. of California, Higgins Bldg., Los Angeles, Calif. | 3 | 270,000 | J. A. Brown | R. A. Sperry* | D. W. Woods | F. C. Adams | E. R. Rich | R. C. Wheeler | R. M. Ketchum |
| Getty, George F., Gasoline Co., 1060 Subway Terminal, Los Angeles, Calif. | 1 | 10,000 | George F. Getty | J. Paul Getty | L. R. Richard | Fero Williams | | Ben A. Koehler | |
| Gillespie & Moran, Inc., 1534 Hunt Bldg., Tulsa, Okla. | 1 | 28,000 | L. A. Gillespie | W. B. Moran | Paul Schaefer | W. B. Moran | L. A. Gillespie | Paul Schaefer | |
| Gilmore, Forrest E., 1208 Public Service Bldg., Portland, Ore. | 13 | 137,000 | Chester A. Sheppard | Hilmar Papst* | Seth L. Roberts | Seth L. Roberts | S. C. Harmon | R. M. McCalley | Fred L. Jacobs |
| Gilmore Gasoline Plant No. 1, 2423 E. 28th St., Los Angeles, Calif. | 1 | 30,000 | E. B. Gilmore | | C. S. Beesemyer | C. S. Beesemyer | | H. L. Eggleston | C. P. Boone |
| Gilmore-Dabney Gasoline Corp., 2423 E. 28th St., Los Angeles, Calif. | 3 | 93,000 | E. B. Gilmore | Ray. T. Chandler | C. S. Beesemyer | C. S. Beesemyer | | H. L. Eggleston | C. P. Boone |
| Gould, Nancy E., & Son, R. F. D. No. 6, Butler, Pa. | 1 | 26 | | | | | | Floyd B. Gould | |
| Graham Oil & Gas Co., Graham, Tex. | 1 | 7,500 | Philip Wiseman | H. S. Mudd* | G. R. Paull | G. R. Paull | | | E. R. Marchman |
| Grandin-Clinger-Bell & Jennings, Tidioute, Pa. | 1 | 120 | Small partnership | | | | | | |
| Grimes Gasoline Co., World Bldg., Tulsa | 7 | 24,000 | Charles W. Grimes | Philo W. Grimes | Otha H. Grimes | Otha H. Grimes | Otha H. Grimes | Otha H. Grimes | Otha H. Grimes |
| Grimes, Otha H., and Roy O. Neal, 601 World Bldg, Tulsa | 1 | 3,000 | | | | | Otha H. Grimes | | Roy O. Neal |
| Gulf Production Co., Petroleum Bldg., Fort Worth, Tex. | 7 | 55,307 | G. S. Davison | F. A. Levy | W. J. Guthrie | J. E. Nelson | | G. A. Poole | C. S. Youngblood |
| Gulf Refining Co. of Louisiana, Ardis Bldg., Shreveport, La. | 3 | 7,000 | | C. R. Minor | | | | W. H. Vaughan | |
| Gypsy Oil Co., First Natl. Bank Bldg., Tulsa | 10 | 106,000 | | Henry McGraw* | D. B. Catterlin | C. B. Clothier | | H. R. Auerswald | V. C. Fuller |
| Hanlon Gasoline Co., 301 E. First St., Tulsa | 3 | 62,500 | E. I. Hanlon | D. E. Buchanan* | Lynn C. Holloway | J. H. Boyle | A. F. Wood | J. H. Boyle | V. J. Melvin |
| Hadden, J. B., Sheffield, Pa. | 1 | 400 | J. B. Hadden, Owner | | | | | | |
| Hales & Cassidy, 1208 Hales Bldg., Oklahoma City, Okla. | 1 | 1,000 | Partnership, W. T. Hales, general manager | | | | Charles H. Clark, | Charles H. Clark | Charles H. Clark |
| Hapgood, Roswell T., & Co., 705 Kanawha Natl. Bank Bldg., Charleston, W. Va. | 1 | 3,500 | Roswell T. Hapgood | | | | Roswell T. Hapgood | | |
| Harland Oil Co., Drawer A, Wolco, Okla. | 2 | 2,500 | W. W. Vensel | T. S. Loffland | Charles O. Duve | | | Charles O. Duve | Charles O. Duve |
| Haskell & Bayliss, Pleasantville, Pa. | 1 | 100 | Not Incorporated | | | | | | |
| Haskell & Dunham, Pleasantville, Pa. | 1 | 50 | Not Incorporated | | | | | | |
| Heck, W. B., & Co., Box 164, Owensboro, Ky. | 1 | 250 | C. E. Daugherty | | | | | | |
| Henderson Co., The, 503 Bank of Commerce Bldg., Tulsa | 3 | 39,000 | F. C. Henderson | J. W. Glass | F. C. Hall | E. P. Henderson | F. C. Hall | J. O. Huffman | F. C. Hall |
| Henighan & Hanlon, Sistersville, W. Va. | 1 | 200 | Partnership | | G. D. May | M. K. Sexton | E. D. Hanlon | | |
| Herkness, J. Smylie, Tenth and Lombard Sts., Philadelphia, Pa. | 1 | 1,500 | J. Smylie Herkness, owner | | | | | A. J. Flint | |
| Hickey & Rieg, Clarendon, Pa. | 1 | 400 | | | Eugene K. Rieg | Eugene K. Rieg | John M. Hickey | John M. Hickey | |
| Highway Gasoline Co., 410 Roosevelt Bldg., Los Angeles, Calif. | 2 | 17,000 | William Ford | S. A. Reed | Francis B. Gormley | S. A. Reed | | | T. B. Gormley |
| Highway Oil Refining Corp., Philcade Bldg., Tulsa | 2 | 1,000 | F. I. Louis | F. A. Baker* | R. B. Pringle | C. B. Lynch | R. O. Wikoff | J. R. Pringle | R. O. Wikoff |
| Hirt-MacDermott & Co., 407 Capps Bldg., Fort Worth, Tex. | 1 | 5,000 | W. F. MacDermott | L. E. Hirt | J. E. Anderson | W. F. MacDermott | W. F. MacDermott | T. N. Williams | J. E. Anderson |
| Hirt-MacDermott Gasoline Co., 407 Capps Bldg., Fort Worth, Tex. | 1 | 5,000 | W. F. MacDermott | L. E. Hirt | J. E. Anderson | W. F. MacDermott | | F. P. Carroll | J. E. Anderson |
| Honolulu Consolidated Oil Co., 215 Market St., San Francisco, Calif. | 1 | 50,000 | A. C. Diericx | A. C. Mattei* | W. P. Roth | R. H. Wright | | R. R. McGuire | |
| Hope Construction & Refining Co., 545 William Penn Way, Pittsburgh, Pa. | 44 | 294,700 | Christy Payne | John B. Corrin | S. E. W. Burnside | R. D. Beardsley | | W. B. Gribble | F. O. Le Roy |
| Huber, J. M., Co. of Louisiana, 460 W. Thirty-fourth St., New York, N. Y. | 1 | 4,000 | J. M. Huber | H. W. Huber | C. W. Easterling | Walter Huber | H. W. Price | R. D. Morgan | E. M. Eckhart |
| Hudson Oil Co., 402 Avery St., Parkersburg, W. Va. | 1 | 100 | C. B. Watson | H. L. Stout | B. Ferrell | B. Ferrell | | | |
| Humble Oil & Refining Co., Humble Bldg., Houston, Tex. | 14 | 63,760 | W. S. Farish | H. C. Wiess* | F. O. Freese | R. L. Blaffer | B. H. Brown | W. O. Stowell | J. M. Sitler |
| Hunter, Livingston L., Trust, Tidioute, Pa. | 1 | 300 | J. L. Hunter, trustee | | | | | | |
| Imperial Oil & Gas Products Co., 1104 Union Bank Bldg., Pittsburgh, Pa. | 1 | 400 | Joseph Hartman | Homer Adams* | W. P. McNellie | W. P. McNellie | W. P. McNellie | J. C. Westfall | W. P. McNellie |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | 7 | 87,000 | R. C. Sharp | C. P. Dimit* | John E. Curran | R. M. Riggins | J. V. McCormick | R. R. Dean | E. A. Cook |
| Indian Territory Illuminating Oil Co., Bartlesville, Okla. | 5 | 145,000 | H. V. Foster | Burdette Blue* | E. B. Emenhiser | C. H. Caldwell | G. V. N. Yates | T. A. Stevens | H. D. Partridge |
| Jeffer on Gasoline Co., Hayland, Ohio | 1 | 100 | | | | | J. F. Carson | | J. F. Carson |
| Jennings, E. H., Bros. Co., 608 Columbia Bldg., Pittsburgh, Pa. | 2 | 2,000 | R. G. Jennings | E. D. Jennings | F. D. Brunt | F. D. Brunt | J. G. Vollmer | W. J. Beggs | C. W. Freehling |
| Johnson & Myers Bros., R. F. D. 3, Tidioute, Pa. | 1 | 200 | Partnership | Ernest R. Johnson, manager | | | | | |
| Kanawha Oil Co., 608 Columbia Bldg., Pittsburgh, Pa. | 2 | 1,250 | E. D. Jennings | R. G. Jennings | F. D. Brunt | F. D. Brunt | J. G. Vollmer | W. H. Reardon | C. W. Freehling |
| Kansas Gasoline Co., Box 1991, Tulsa | 1 | 5,000 | J. A. Hull | Ralph C. Ripley | O. J. McCann | P. F. Cole | | W. A. Melton | P. F. Cole |
| Kentucky Pipe Line Co., 311 W. Chestnut, Louisville, Ky. | 1 | 2,600 | J. J. O'Brien | T. B. Wilson | J. J. McKenna | J. J. McKenna | G. Davies | J. A. Yunker | G. Davies |
| Kewanee Oil & Gas Co., 2317 Fidelity Trust Bldg., Philadelphia, Pa. | 2 | 1,000 | William M. Potts | | R. B. Ashenfelter | R. B. Ashenfelter | | T. B. Steele | |
| LaSalle Petroleum Co., 608 Wright, Bldg., Tulsa | 1 | 11,000 | John A. Prescott | W. J. Schnur | W. J. Coppinger | W. E. Bennett | S. C. Cameron | W. B. Fisher | J. E. Tanner |
| Lebow, C. H., 508 Atlas Bldg., Tulsa | 1 | 1,800 | | | | | Roy O. Neal | Roy O. Neal | Roy O. Neal |
| Liberty Oil & Gas Co., 343 Pa. Ave. W., Warren, Pa. | 1 | 30 | J. D. Lunn | H. C. Eba* | Ed M. Schwing | C. J. Schiehuber | | William J. Wagner | Ohio Oil Co. |
| Lomita Gasoline Co., Twenty-ninth and Orange Ave., Long Beach, Calif. | 1 | 85,000 | Ferdinand R. Bain | A. T. Jergins* | F. S. Wade | F. S. Wade | F. S. Wade | L. V. Cassaday | Harold J. Clark |
| Lone Star Gas Co., 1915 Wood St., Dallas, Tex. | 10 | 100,000 | L. B. Denning | R. A. Crawford* | D. L. Cobb | D. L. Cobb | | J. R. Jarvis | B. R. Newbery |
| Louisiana Oil Refining Corp., First Natl. Bank Bldg., Shreveport, La. | 1 | 40,000 | M. J. Grogan | B. P. Crittenden | C. R. Harrison | T. H. Grobe | C. M. Lamason | R. B. Pierce | F. T. Reed |
| Magnolia Petroleum Co., Dallas, Tex. | 25 | 125,970 | E. R. Brown | B. H. Stephenson* | Courtenay Marshall | W. C. Proctor | E. P. Angus | W. M. Ray | E. R. Folmar |
| Mahutska Oil Co., Robinson State Bank Bldg., Robinson, Ill. | 3 | 2,000 | James E. Hughes | Alex V. McCandless | John T. Smith | Alex V. McCandless | | Alex V. McCandless | Alex V. McCandless |
| Masoneal Gasoline Co., 418 First Natl. Bank Bldg., Tulsa | 1 | 1,000 | D. B. Mason | | J. E. Monroe | J. E. Monroe | | O. Reeves | |

(Continued on Page 124)

# Staff of the MACHINERY COMPANY

H. E. LOTT
*Mechanical Engineer*
*Oklahoma A. & M.*

C. H. JONES
*Mechanical Engineer*
*Oklahoma A. & M.*

S. H. MORRIS
*Structural Engineer*

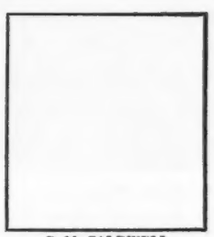
D. E. FIELDS
*Mechanical Engineer*
*Oklahoma U.*

M. H. SAVAGE
*Junior Engineer*

H. H. WALKER
*Junior Engineer*
*Oklahoma A. & M.*

J. T. I. MULLICAN
*Civil Engineer*
*Texas A. & M.*

TED HODGES
*Civil Engineer*
*Oklahoma U.*



B. M. CALDWELL
*Chemical Engineer*
*Texas A. & M.*

the part of plant operators and designing engineers. Located in Tulsa, the heart of the Mid-Continent field and scene of the annual convention, the engineers of the Tulsa Boiler & Machinery Company welcome the members of the Natural Gasoline Association of America.

Oklahoma City, Oklahoma
443 Commercial Exghange Bldg.

## Boiler & Machinery Co.

TANKS REFINING EQUIPMENT

# Personnel of Natural Gasoline Industry

| Company and general office address— | No. plants | Daily cap'y. gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| Midco Oil Corp., Midco Bldg., Tulsa | 3 | 30,000 | H. T. Heald | C. C. Toomey | Burton French | | | H. W. Kelsey | |
| Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa | 9 | 41,700 | Jacob France | J. C. Denton* | | Charles Klein | | F. E. Kearney | Charles Pritchard |
| Mid-Kansas Oil & Gas Co., Findlay, Ohio | 3 | 20,000 | R. J. Berry | W. W. Fleming | E. B. Redpath | J. L. Cook | | W. E. Smith | H. B. Carpenter |
| Midwest Refining Co., First Natl. Bank Bldg., Denver, Colo. | 1 | 80,000 | T. A. Dines | R. S. Ellison* | L. G. Truby | W. L. Greiner | | P. G. Weidner | A. G. Fidel |
| Monroe Louisiana Carbon Co., 45 E. Forty-second St., New York, N. Y., and Monroe, La. | 1 | 2,000 | F. F. Curtze | Edwin Binney* | R. L. Carr | G. L. Bubb | W. H. Anders | W. E. Reardon | W. E. Reardon |
| Moon Gasoline Co., 624 S. Cheyenne Ave., Tulsa | 2 | 2,600 | Thomas Chestnut | C. P. Quinlan | J. L. Goddard | M. F. Powers | E. C. Sager | M. F. Powers | G. A. Keefe |
| Muskingum Oil Co., Sistersville, W. Va. | 1 | 100 | Miles B. Hubbard, owner | | | | | | |
| Myers & Hays, Chicora, Pa. | 1 | 55 | | | | | | | |
| McMan Oil & Gas Co., Drew Bldg., Tulsa | 4 | 22,000 | J. A. Chapman | R. M. McFarlin* | W. G. Guiss | W. G. Guiss | | G. S. Bays | M. R. Rushing |
| McPherson Oil & Gas Development Co., United Life Bldg., Salina, Kans. | 2 | 22,000 | A. M. Patten | L. W. Johnson* | D. H. Holmes | A. J. Berta | | C. E. Brock | A. H. Purdy |
| Natural Gas Products Co., Los Angeles, Calif. | 1 | 3,500 | Shane Morgan | James E. Kelby | James E. Kelby | James E. Kelby | | R. L. James | |
| National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa. | 6 | 9,450 | F. W. Finley | Harry M. Brown | M. E. Eberle | M. E. Eberle | | H. A. Frame | |
| National Supply Co. of Texas, Fort Worth, Tex. | 1 | 11,500 | | J. A. Geismar | | | H. G. Trimble | E. C. Smith | |
| Neal Gasoline Co., 507 Atlas Bldg., Tulsa | 2 | 4,150 | Roy O. Neal | H. B. Neal | | | Roy O. Neal | H. B. Neal | Roy O. Neal |
| New York Oil Co., 107 S. Wolcott St., Casper, Wyo. | 2 | 2,700 | Emil H. Steiger | Whitney G. Case | H. C. Curtis | H. C. Curtis | | | |
| New York Petroleum Co., 402 Avery St., Parkersburg | 1 | 100 | | H. L. Stout | B. Ferrell | M. H. Goodkind | | John L. Davis | |
| Nolan & Lamberton, 212 S. Olympia, Tulsa | 1 | 200 | Partnership | | | | | | |
| North American Oil Consolidated, 351 California St., San Francisco, Calif. | 1 | 3,000 | T. C. Kieruliff | H. B. Sperry | Frank Evans | | | A. B. Jenks | |
| North Penn Gas Co., 103 Mill St., Port Allegany, Pa. | 1 | 400 | H. P. Stevens | J. H. Isherwood* | J. C. Forsyth | C. R. Beddows | | L. F. Schlosser | |
| Norton & Jackson, Tidioute, Pa. | 1 | 100 | E. E. Norton | M. E. Jackson | E. E. Norton | E. E. Norton | | | |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | 5 | 193,500 | Lionel T. Barneson | H. J. Barneson | W. E. Kropp | | | E. L. Tobias | H. M. Paulsen |
| O'Hara, Sarah C., 218 E. North St., Butler, Pa. | 1 | 100 | Sarah C. O'Hara | | Sarah C. O'Hara | Sarah C. O'Hara | L. E. Riggle | | L. E. Riggle |
| Ohio Oil Co., Findlay, Ohio | 43 | 79,817 | O. D. Donnell | R. J. Berry* | E. B. Redpath | F. A. Bellstone | | | |
| Oil & Gas Co., Second St., St. Marys, W. Va. | 1 | 300 | Reese Blizzard | A. D. Ireland | Ross Wells | T. G. Reits | W. O. Wells | Ira Williams | Ira Williams |
| Oil State Gasoline Co., 424 S. Cheyenne Ave., Tulsa | 2 | 8,500 | Oscar B. Howard | | Dalton Lain | C. E. Duffield | | John M. Hall | W. G. Kirschke |
| Oklahoma Gasoline Plants, Inc., 512 Berryhill Bldg., Sapulpa, Okla. | 1 | 5,500 | L. B. Jackson | | M. D. Fitzgerald | R. J. Ranck | | E. E. Thompson | |
| Okmulgee Producers & Manufacturers Gas Co., McCulloch Bldg., Okmulgee, Okla. | 1 | 2,000 | W. B. Price | C. H. Baker | William A. Hiatt | R. D. Pine | J. R. Schoy | J. R. Schoy | R. D. Pine |
| Orfic Gasoline Production Co., Natl. Bank of Commerce, Tulsa | 3 | 12,000 | A. C. H. Snyder | F. L. Townsley | M. A. Bigelow | M. A. Bigelow | E. M. Wildman | | M. A. Bigelow |
| Owens, Libbey-Owens Gas Dept., Nicholas Bldg., Toledo, Ohio | 1 | 10,000 | J. C. Blair and H. G. Phillips, managing committee | | | | | F. F. Ketchum | Leo L. Kohlbecker |
| Pacific American Gasoline Co. of Texas, 1220 Pacific Mutual Bldg., Los Angeles, Calif. | 1 | 33,000 | F. E. Keeler | B. F. Masten | Frank B. Ansted | | | | |
| Pacific Western Oil Co., 714 W. Tenth St., Los Angeles, Calif. | 3 | 10,000 | Wm. C. McDuffie | Ernest J. Howe* | Harry O. Ravis | Roland J. Pagen | | S. F. Magor | John M. Grant |
| Pala Oil Co., Inc., 908 McNeil St., Shreveport, La. | 1 | 300 | F. L. Wiegand | J. M. Post | T. M. Hope | T. M. Hope | | C. P. Hanlen | C. P. Hanlen |
| Palmer Corp. of Louisiana, City Savings Bank & Trust Co., Shreveport, La. | 2 | 30,000 | H. L. Hollis | N. C. McGowen* | E. P. Summerson | A. C. Ray | | F. L. Rhoads | D. R. McWilliams |
| Parker, H. R., Chicora, Pa. | 2 | 150 | H. R. Parker, owner | | | | | | |
| Pep Gasoline Co., Box 309, Sedan, Kans. | 1 | 1,800 | James O'Neil Bruen | C. J. Bohner | E. W. Bruen | James O'Neil Bruen | | William Harmon | |
| Peppers Gasoline Co., Champlin Bldg., Enid, Okla. | 1 | 300 | Charles C. Peppers | | H. H. Champlin | H. H. Champlin | | O. C. Sullivan | |
| Pequignot, E. O., Tidioute, Pa. | 3 | 400 | E. O. Pequignot (individually operated) | | | | | | |
| Petroleum Exploration, Trico Bldg., Sistersville, W. Va. | 1 | 500 | E. A. Durham | A. C. Jackson* | L. E. Gregg | L. E. Gregg | | A. H. Wagner | |
| Phillips Petroleum Co., Bartlesville, Okla. | 44 | 1,163,000 | Frank Phillips | C. H. Alexander* | O. K. Wing | O. K. Wing | H. A. Trower | F. E. Rice | H. E. Koopman |
| Philmore Gasoline Corp., 412 Philtower Bldg., Tulsa | 2 | 18,500 | Forrest E. Gilmore | F. E. Rice | Carl W. Gilmore | Carl W. Gilmore | | Carl W. Gilmore | |
| Pittsburgh & West Virginia Gas Co., 435 Sixth Ave., Pittsburgh, Pa. | 1 | 4,000 | F. R. Phillips | F. F. Schauer | W. B. Carson | C. J. Braun, Jr. | George E. Whitwell | | C. W. Lepper |
| Powers, M. F., 624 S. Cheyenne Ave., Tulsa | 2 | 12,200 | M. F. Powers, owner | | | | E. C. Sager | M. F. Powers | G. A. Keefe |
| Powers & Quinlan, 624 S. Cheyenne Ave., Tulsa | 2 | 1,700 | M. F. Powers, Felix Quinlan, Jr., Felix Quinlan, Sr., partners | | | | E. C. Sager | Felix Quinlan | G. A. Keefe |
| President Oil Co., Emlenton, Pa. | 4 | 825 | H. J. Crawford | | J. E. Taylor | J. E. Taylor | | H. J. Crawford | |
| Preston Oil Co., 99 N. Front St., Columbus, Ohio | 7 | 52,500 | Raymond Cross | C. I. Weaver | P. A. Alberty | L. A. Seyffert | G. E. Howard | G. T. Koch | G. R. Miller |
| Price, Harry D., Renfrew, Pa. | 1 | 40 | Harry D. Price, owner | | | | | | |
| Producers & Refiners Corp., P.O. Box 449, Independence, Kans. | 1 | 3,500 | L. R. Crawford | John Fertig* | A. W. Heinemann | O. O. Holmgren | A. T. Smith | | |
| Pure Oil Co., 35 E. Wacker Drive, Chicago, Ill. | 15 | 75,200 | Henry M. Dawes | C. B. Watson* | F. S. Heath | Rawleigh Warner | R. H. McElroy, Jr. | R. H. Carr | G. L. Parsons |
| Rainbow Gasoline Corp., 503 Bank of Commerce Bldg., Tulsa | 1 | 13,000 | D. S. Brooks | S. A. Brooks | F. C. Hall | F. C. Henderson | | | |
| Rancho La Brea Oil Co., 629 Spring St., Los Angeles, Calif. | 1 | 5,000 | Not incorporated | | | | J. H. Chapman | C. E. Haraszthy | J. B. Munro |
| Red River Oil Co., Drew Bldg., Tulsa | 1 | 2,500 | R. M. McFarlin | O. H. Chapman | H. G. Barnard | J. A. Chapman | | G. S. Bays | M. R. Rushing |
| Reno Oil Co., Sistersville, W. Va. | 8 | 892 | J. P. Flynn | T. B. Gregory | W. R. Reitz | W. R. Reitz | | J. P. Flynn | |
| Reserve Gas Co., 545 Wm. Penn Way, Pittsburgh, Pa. | 1 | 20,000 | J. B. Tonkin | T. B. Gregory | S. E. W. Burnside | R. D. Beardsley | | L. L. Tonkin | F. O. LeRoy |
| Reserve Petroleum Co., Eighth Floor, Philcade Bldg., Tulsa | 5 | 39,000 | Fred Phillips | D. W. Johnson | Hunter Johnson | D. W. Johnson | L. R. Brammer | C. W. Warwick | |
| Reservoir Hill Gasoline Co., 417 S. Hill St., Los Angeles, Calif. | 1 | 30,000 | L. E. Lockhart | L. M. Lockhart* | L. M. Lockhart | Charles S. Jones | J. M. Reed | R. E. Wells | H. H. Kelly |
| Rice Ranch Oil Co., 548 S. Spring St., Los Angeles, Calif. | 2 | 8,500 | Alfred C. Webster | G. W. Lichtenberger* | A. J. Bayer | | | Edgar Craig | |
| Rio Grande Oil Co., 855 Subway Terminal Bldg., Los Angeles, Calif. | 1 | 30,000 | L. E. Lockhart | A. M. Lockhart | L. M. Lockhart | C. S. Jones | J. N. Reed | F. H. Etheridge | H. H. Kelly |

(Continued on Page 126)

# The Louisville Refining Co., Spent Only $1,500 To Save $10,000 On Investment Cost.

## The Vogt Multitube Heat Exchanger

Throughput of crude was increased from 3500 barrels to 4200 barrels. At the same time the temperature of the crude on the way to the stills was increased 40 degrees F. without additional fuel consumption. This increase in capacity and economy was effected by the installation of a stand of Vogt Multitube Heat Exchanger alongside of two existing stands. The money appropriated for new stills and additional condensing and fractionating equipment was saved.

**HENRY VOGT MACHINE CO.**
(Incorporated)
LOUISVILLE, KY.

NEW YORK
CHICAGO
CLEVELAND
DALLAS
PHILADELPHIA

*Manufacturers of:* Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

# Personnel of Natural Gasoline Industry

| Company and general office address— | No. plants | Daily cap., gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| Roeser & Pendleton, Inc., 613 Fort Worth Club Bldg., Fort Worth, Tex. | 1 | 30,000 | Charles F. Roeser | T. T. Pendleton* | H. B. Owens | H. B. Owens | | G. P. Crutchfield | A. M. Brackett |
| R. G. Rogers Oil Co., Boling, Ill. | 1 | 60 | | | A. B. Cheuvront | A. B. Cheuvront | | | |
| Ryan & Hackett Co., Inc., 311 Associated Realty Bldg., Los Angeles, Calif. | 1 | 2,200 | G. P. Ryan | H. A. Hackett | Joseph H. Haring | Joseph H. Haring | | | |
| Sand Springs Home Gasoline Dept., Sand Springs, Okla. | 1 | 3,000 | E. M. Monsell | Ed A. Page | C. F. Tingley | C. F. Tingley | E. M. Monsell | Homer Crooks | S'd Sp'g Sup. H'se |
| Sandy Oil & Gas Co., Shippenville, Pa. | 1 | 600 | A. B. Collner | | J. M. McLaughlin | J. M. McLaughlin | | | J. M. McLaughlin |
| Shaffer Oil & Refining Co., 424 S. Cheyene Ave, Tulsa | 5 | 25,000 | John J. O'Brien | John L. Gray* | W. R. Francisco | W. R. Francisco | B. L. Majewski | W. A. Melton | R. G. Martin |
| Shamrock Oil & Gas Co., Amarillo Bldg., Amarillo, Tex. | 1 | 16,000 | John J. Sheerin | Jas. M. Baldridge | H. D. Thompson | J. B. Orr | | C. E. Dixon | N. E. Schmerder |
| Sharpe, Rowe & Roeder, 305 E. Walnut, Titusville, Pa. | 1 | 85 | | | J. J. Sharpe | J. J. Sharpe | J. J. Sharpe | J. J. Sharpe | J. J. Sharpe |
| Shell Oil Co., 200 Bush St. San Francisco, Calif. | 6 | 256,000 | C. Legh-Jones | H. R. Gallagher | A. R. Bradley | John Lander | H. R. Gallagher | | J. C. Storey |
| Shell Petroleum Corp., Shell Bldg., St. Louis, Mo. | 14 | 183,000 | U. deB. Daly | T. F. Lydon* | P. R. Chenoweth | T. F. Lydon | L. van Eeghen | S. S. Smith | C. B. Singleton |
| Signal Hill Gasoline Co., 555 S. Flower St., Los Angeles, Calif. | 12 | 183,000 | J. A. Talbot | J. S. Wallace* | G. P. Lyons | G. P. Lyons | | H. R. Linhoff | |
| Signal Oil & Gas Co., 727 W. Seventh St., Los Angeles, Calif. | 8 | 157,500 | S. B. Mosher | H. M. Mosher | O. W. March | O. W. March | | R. W. Heath | |
| Silurian Oil Co., 704 Shell Bldg., St. Louis, Mo. | 1 | 1,500 | D. A. Mahaffey | | E. R. Christman | E. R. Christman | | J. B. Crisman | |
| Simms Oil Co., 1007 Magnolia Bldg., Dallas, Tex. | 2 | 13,500 | Edward T. Moore | F. R. Schneider* | L. W. Richards | D. H. Voss | F. R. Schneider | W. L. Todd | W. J. Morrison |
| Sinclair Oil & Gas Co. (gasoline dept.), Sinclair Bldg., Tulsa | 16 | 403,000 | R. A. Griffith | H. B. Bernard* | A. E. Barrus | A. E. Barrus | A. T. Scherer | C. L. Brown | C. A. McNamara |
| Skelly Oil Co., Skelly Bldg., Tulsa | 17 | 223,250 | W. G. Skelly | C. C. Herndon* | J. Roy Thompson | F. T. Hopp | G. A. R. Slocum | Emby Kaye | F. W. Robertson |
| Sloan & Zook Co., 101 Main St., Bradford, Pa. | 1 | 1,500 | R. T. Zook | William J. Sloan | C. T. Rickerson | William J. Sloan | Paul H. Zook | Paul H. Zook | R. F. Easford |
| Smith-Hanlon, Inc., Chestnut & Smith Bldg., Tulsa | 1 | 10,000 | E. I. Hanlon | J. K. Smith | J. H. Boyle | D. E. Buchanan | A. F. Wood | F. G. Yonker | |
| Snowden & McSweeney Co., 568 Madison Ave., New York, N. Y. | 1 | 1,000 | H. McSweeney | J. H. Snowden* | Pearl M. Snowden | J. H. Snowden | | A. E. Baldwin | |
| Southern Gasoline Co., Ranger, Tex. | 1 | 2,500 | Fred C. Lewis | | D. M. Trott | D. M. Trott | | H. R. Hinman | |
| Southern Oil Co., 1005 Farmers Bank Bldg., Pittsburgh, Pa. | 12 | 2,750 | E. B. Reeser | E. O. Bartlett* | James A. Dunn | E. O. Bartlett | | F. H. McQuiston | F. H. McQuiston |
| South Penn Oil Co., 545 William Penn Way, Pittsburgh, Pa. | 60 | 35,000 | L. W. Young, Jr. | P. H. Curry* | John L. Hayes | S. G. Hartman | W. A. Jackley | C. B. Turner | E. W. Kartlick |
| South Land Gasoline Co., 417 W. Sixth St., Tulsa | 1 | 2,000 | J. B. Arbon | H. M. Preston | B. H. Arbon | B. H. Arbon | D. J. Arbon | B. J. Arbon | B. J. Arbon |
| South Plains Pipe Line Co., Independence, Kans. | 1 | 2,500 | Dana H. Kelsey | V. A. Hays | A. W. Heinemann | O. O. Holmgren | | John S. Legate | H. E. Kimbell |
| Southwest Production Co., 121½ W. Seventh St., Bristow, Okla. | 1 | 3,000 | F. W. Woodcock | E. A. Feltkeller* | H. P. Woodcock | C. D. Perry | B. E. Bond | B. P. Stockwell | R. L. Patten |
| Southwest Refining Co., 3000 Walnut St., Long Beach, Calif. | 1 | 5,000 | J. Lloyd Denny | | Fred B. Bowe | John D. Organ | | J. R. Trent | |
| Standard Gasoline Co., 225 Bush St., San Francisco, Calif. | 39 | 508,750 | K. R. Kingsbury | R. J. Hanna* | J. H. Tuttle | R. C. Warner | | | |
| Standard Oil Co. (Indiana), 910 Michigan Ave. Chicago, Ill. | 6 | 79,848 | E. G. Seubert | Allan Jackson* | F. T. Graham | C. J. Barkdull | | E. J. Goldman | E. J. Bullock |
| Star Gasoline Co., Sapulpa, Okla. | 1 | 800 | D. A. McDougal | J. E. Fought | T. H. Stuart | | T. H. Stuart | M. F. Phillips | M. F. Phillips |
| State Gasoline Corp., 900 Spring Arcade Bldg., Los Angeles, Calif. | 4 | 92,500 | J. W. Jameson | M. P. Simon | S. W. McComb | S. W. McComb | | K. G. Steinbeck | |
| Sterling Oil & Gas Co., Abilene, Tex. | 1 | 200 | C. H. Petry | W. S. Duty | J. G. Pettus | J. G. Pettus | T. T. Curtis | T. T. Curtis | T. T. Curtis |
| St. Helens Petroleum Co., Ltd., 1026-38 Western Pacific Bldg., Los Angeles, Calif. | 3 | 2,800 | † | † | A. P. McEachern | | | | |
| Stranahan & Cheuvront, Oblong, Ill. | 3 | 90 | Co-partnership | | A. B. Cheuvront | A. B. Cheuvront | | A. B. Cheuvront | |
| Sutton Bros., Inc., Steubenville, Ohio | 1 | 50 | H. L. Sutton | C. E. Sutton | N. A. Sutton | N. A. Sutton | | | |
| Superior Oil Corp., Exchange Bldg., Tulsa | 24 | 23,000 | H. G. Davies | J. H. O'Rear* | G. C. Harned | G. C. Harned | | Francis Neely | H. A. Wilson |
| Surety Oil Co., Titusville, Pa. | 1 | 1,000 | H. A. Downs | J. A. Black | William Strance | Amos Strance | J. A. Black | J. A. Black | J. A. Black |
| Swiss Oil Corp., Lexington, Ky. | 2 | 2,000 | E. L. McDonald | | J. H. Combs | | | G. M. Campbell | |
| Test Oil Co., 43 Main St., Bradford, Pa. | 1 | 400 | Lewis Emery | E. C. Emery | C. H. Olmsted | Lewis Emery | J. L. Moran | J. L. Moran | J. L. Moran |
| The Texas Company (Delaware), Houston, Tex. | 19 | 178,600 | R. C. Holmes | C. B. Ames* | E. M. Crone | C. E. Woodbridge | | | A. F. Colling |
| The Texas Company (California), Houston, Tex. | 13 | 367,500 | R. C. Holmes | C. B. Ames | E. M. Crone | C. E. Woodbridge | | | A. F. Colling |
| Texas Louisiana Producing & Carbon Co., Inc., 811-812 Ouachita Bank Bldg, Monroe, La. | 1 | 7,000 | R. R. Beaman | Travis Oliver | C. H. Reid | C. H. Reid | | | |
| Texas Pacific Coal & Oil Co., Fort Worth, Tex. | 4 | 37,000 | Edgar T. Marston | E. R. Lederer* | R. Seibel | R. Seibel | F. D. Bostaph | D. B. Hiatt | J. C. Davis |
| Thomas, R. L., 290 Main St., Tidioute, Pa. | 1 | 200 | R. L. Thomas | | | | | | |
| Tidal Refining Co., Philcade Bldg., Tulsa | 3 | 33,000 | Noel Robinson | C. R. Barton* | D. W. Bell | D. W. Bell | | | P. W. Fenton |
| Tidal-Western Oil Corp., Philcade Bldg., Tulsa | 1 | 15,000 | Noel Robinson | C. R. Barton | D. W. Bell | D. W. Bell | | | P. W. Fenton |
| Tiger Mountain Oil Co., 802 Thompson Bldg., Tulsa | 1 | 3,000 | G. C. Arnold | | R. R. Poe | R. R. Poe | | La Van Warren | |
| Tompsett Bros., Tidioute, Pa. | 1 | 275 | W. C. Tompsett | | | | | | |
| Transcontinental Oil Co., Thompson Bldg., Tulsa | 5 | 22,000 | F. B. Parriott | L. B. McCammon* | E. D. Robinson | E. D. Robinson | H. J. Scott | R. T. Hapgood | W. R. Brown |
| Tyler Oil Co., Wells St., Sistersville, W. Va. | 4 | 159 | H. J. Crawford | S. Messer | Nell B. McCoy | L. B. Gregory | | J. P. Flynn | |
| Union Gas Products, Inc., 710 Ouachita Bank Bldg., Monroe, La. | 1 | 6,000 | David S. Lansden | C. M. Roos | Henry Bernstein | David S. Lansden | | H. C. Walton | H. C. Walton |
| Union Gasoline Co., Commercial Natl. Bank Bldg., Independence, Kans. | 1 | 5,000 | Paul R. Johnson | Donald W. Stewart | Donald W. Stewart | H. F. Mitchell | | John H. Morris | W. L. Orr |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles, Calif. | 9 | 311,000 | W. L. Stewart | L. P. St. Clair* | John McPeak | R. J. Keown | V. H. Kelly | R. W. Garman | H. C. Farquhar |
| United Carbon Co., Union Bldg., Charleston, W. Va. | 4 | 22,000 | Oscar Nelson | L. S. Horner* | G. A. Williams | T. A. Whelan | A. G. Threadgold | A. J. MacKinnon | C. A. Urban |
| U. S. Carbon Co., 123 E. Pine St., Bastrop, La. | 1 | 2,000 | | W. J. Parkes | L. W. Burrow | R. B. Todd | | Ed Parkes | R. F. McBride |
| United States Refining Co., 1001 Board of Trade Bldg., Los Angeles, Calif. | 1 | 25,000 | C. J. Von Blbra | Walter R. Cowan* | Earle F. Demond | Earle F. Demond | Marshall R. Simon | William A. Kirk | F. S. Moon, Jr. |

(Continued on Page 129)

# Personnel of Natural Gasoline Industry

| Company and general office address— | No. plants | Daily cap'y. gallons | President | Vice President | Secretary | Treasurer | Sales Manager | Gen. Supt. of Plants | Purchasing Agent |
|---|---|---|---|---|---|---|---|---|---|
| Veach Oil Co., Veach Bldg., Oil City, Pa. | 1 | 30 | George J. Veach | | John B. Veach | John B. Veach | | C. O. Mitchell | |
| Victor Gasoline Co., 624 S. Cheyenne, Tulsa | 9 | 47,500 | M. F. Powers | C. P. Quinlan | A. D. Blackard | Felix Quinlan | E. C. Sager | M. F. Powers | G. A. Keefe |
| Viking Gasoline Corp., Peoples Bank Bldg., Charleston, W. Va. | 1 | 1,000 | E. M. Burdette | C. L. Voress | R. B. Skoog | C. L. Gilchrist | A. Ernest MacGee | A. Ernest MacGee | H. C. Lewis |
| Viking Realty Co., Peoples Bank Bldg., Charleston, W. Va. | 1 | 1,000 | E. M. Burdette | C. L. Voress | R. B. Skoog | C. L. Gilchrist | A. Ernest MacGee | A. Ernest MacGee | H. C. Lewis |
| Vincennes Oil & Gas Co., Vincennes, Ind. | 1 | 5,000 | E. M. Kerlin | C. E. Kerlin | R. D. Green | R. D. Green | | E. M. Kerlin | R. D. Green |
| Virginian Gasoline & Oil Co., Quarrier & Dunbar Sts., Charleston, W. Va. | 19 | 204,700 | H. A. Wallace | E. Reynolds, Jr. | E. Reynolds, Jr. | F. B. Fiahive | | R. N. Parks | C. S. Duffield |
| Vollwin Gasoline Co., 1325 Glenarm St., Denver, Colo. | 1 | 1,500 | C. J. Vollmer | Fred L. Sherwin | A. M. Scully | A. M. Scully | | R. B. Calvert | R. B. Calvert |
| Wahl, A. R., Evans City, Pa. | 1 | 168 | A. R. Wahl, owner | | | | | Fred B. Wahl | Fred B. Wahl |
| Waggoner Refining Co., Breckenridge, Tex. | 1 | 10,000 | W. T. Waggoner | | R. L. Moore | R. L. Moore | C. F. Kolp | C. F. Kolp | |
| Ward Gasoline Co., P. O. Box 108, Breckenridge, Tex. | 1 | 6,000 | John C. Ward | W. F. Seeger | Ewell Nalle | Ewell Nalle | W. F. Seeger | W. F. Seeger | W. F. Seeger |
| Warner Caldwell Oil Co., Second Natl. Bank Bldg., Titusville, Pa. | 7 | 6,250 | Alex N. Maurer | J. H. Caldwell, Jr. | F. B. August | F. B. August | P. C. Hatfield | P. C. Hatfield | |
| Washington Development Co., Mount Vernon, Ohio | 1 | 10,000 | R. S. Lord | Robert J. Lindsay | Thomas B. Hall | B. E. Hepler | | J. H. Biddison | |
| Wentz, L. H., Oil Division, Ponca City, Okla. | 2 | 10,000 | Individually owned | | | | | O. H. Schoenwald | S. C. Harkness |
| West Coast Refining Co., Pacific Finance Bldg., Los Angeles, Calif. | 2 | 60,000 | A. H. Bradford | M. D. Schatzman* | W. B. Ogden | | | W. M. Bradford | H. Bradnock |
| Western Gasoline Corp. | 1 | 3,000 | W. K. Warren | J. A. La Fortune | H. E. Felt | H. E. Felt | H. E. Felt | Don Smith | J. A. La Fortune |
| Western National Gasoline Corp., Commercial Exchange Bldg., Los Angeles, Calif. | 1 | 10,000 | R. Florian | A. W. Taylor | L. J. Hart | L. J. Hart | | William Walker | |
| Western Oil Corp. of Texas, Thompson Bldg., Tulsa | 1 | 8,000 | J. F. Darby | George Snedden | Carl Pursel | C. F. Lynde | J. R. Gilbert | J. R. Gilbert | J. R. Gilbert |
| Wilcox, H. F. Oil & Gas Co., Wilcox Bldg., Tulsa | 3 | 14,000 | H. F. Wilcox | G. A. Dye* | L. J. Yarbrough | L. J. Yarbrough | H. E. Bangert | H. W. McCullah | H. B. Ward |
| Wilshire Oil Co., Inc., 2455 E. Twenty-Seventh St., Los Angeles, Calif. | 2 | 125,000 | George L. Machris | Alfred P. Machris | Victor A. Machris | Alfred P. Machris | W. D. Smith | | |
| Wirt Gasoline Co., Bradford, Pa. | 1 | 500 | Nathan Nichols | | | | | N. Nichols | N. Nichols |
| Wiser Oil Co., Trico Bldg., Sisterville, W. Va. | 3 | 2,150 | E. A. Durham | A. C. Jackson* | L. E. Gregg | L. E. Gregg | | H. G. Ellis | |
| Wolverine Petroleum Corp., Shell Bldg., St. Louis, Mo. | 4 | 15,500 | U. deB. Daly | J. C. Van Eck | P. R. Chenoweth | P. R. Chenoweth | L. van Eeghen | S. S. Smith | C. B. Singleton |
| Wright, J. H. Estate, 1700 S. Main St., Sapulpa, Okla. | 1 | 3,500 | Rosa B. Wright, ex-ecutrix | | | | M. L. Murphy | A. B. Nigh | |

## ADDITIONAL VICE PRESIDENTS

Arkansas Natural Gas Corp.—J. R. Munce.
Barnsdall Oil Co.—E. O. Bartlett.
Bell Oil & Gas Co.—Albert Finston.
Big Lake Oil Co.—W. S. Hallanan, J. G. Farquhar.
Calumet Oil Co.—A. J. McDermott.
Carbide & Carbon Chemicals Corp.—G. O. Curme, R. W. White.
Carter Oil Co.—Richardson Pratt.
Coltex Corp.—C. H. Smith.
Continental Oil Co.—W. H. Ferguson, E. S. Karstedt, Walter Miller, E. J. Nicklos.
De Soto Gasoline Co.—W. B. Flynn, P. M. Weiss.
Devonian Oil Co.—L. C. Ritts.
Dinsmoor & Co.—F. K. Sellers.
Dixie Oil Co., Inc.—H. G. Schneider.
Eagle-Picher Lead Co.—J. A. Schaeffer, George W. Potter, R. M. Roosevelt, W. E. Maston.
Empire Oil & Refining Co.—E. L. Peck.
Enfisco Oil Corp.—Sampel L. Smith.
Federal Oil & Gas Co.—M. M. Bauer.
General Petroleum Corp. of California—R. A.Maynard, W. L. McLaine, E. R. Rich.
Gilmore, Forrest E.—E. L. Hall, E. D. Ulrich.
Graham Oil & Gas Co.—L. W. Wickes.
Gypsy Oil Co.—K. Winship.
Hanlon Gasoline Co.—J. H. Boyle.
Highway Oil Refining Corp.—E. D. Davis.
Honolulu Consolidated Oil Co.—C. E. Green, A. P. Welch, W. M. Alexander.
Humble Oil & Refining Co.—R. L. Blaffer, James Anderson, F. P. Sterling, W. W. Fondren, W. E. Pratt, J. S. Bonner, J. R. Suman.
Imperial Oil & Gas Products Co.—Paul A. Hartman.
Independent Oil & Gas Co.—O. L. Cordell, Gillette Hill, J. M. Wadsworth.
Indian Territory Illuminating Oil Co.—C. H. Caldwell, R. L. Gordon, A. V. Hoenig.
Liberty Oil & Gas Co.—C. J. Schlenhuber.
Lomita Gasoline Co.—C. M. Cotton.
Lone Star Gas Co.—F. L. Chase.
Magnolia Petroleum Co.—D. A. Little, R. H. Kinsloe, D. C. Stewart, W. H. Francis, W. C. Proctor, F. V. Faulkner, E. E. Plumly, E. P. Angus.
Mid-Continent Petroleum Corp.—D. W. Moffitt, G. O. Moody.
Midwest Refining Co.—H. G. Naylor, H. C. Bretschneider.
Monroe Louisiana Carbon Co.—C. H. Smith.
McMan Oil & Gas Co.—H. H. Rogers, John Rogers, H. G. Barnard, E. B. McFarlin.
McPherson Oil & Gas Development Co.—E. R. Duree.
North Penn Gas Co.—C. I. Crippen.
Ohio Oil Co.—J. K. Kerr, C. L. Fleming, John McFadyen.
Pacific Western Oil Co.—Cyril J. C. Quinn.
Palmer Corp. of Louisiana—R. H. Hargrove, O. H. Simonds, E. W. Hill, L. H. Parkhurst.
Petroleum Exploration—W. H. Fitzgerald.
Phillips Petroleum Co.—J. H. Kane, W. N. Davis, H. E. Koopman, J. M. Sands, P. J. McIntyre, J. S. Dewar, F. E. Rice, H. A. Trower and C. R. Musgrave, L. E. Phillips, chairman executive committee.
Producers & Refiners Corp.—R. E. Wertz.
Pure Oil Co.—R. W. McIlvain, N. H. Weber, L. S. Wescoat, W. E. Hutton.
Reservoir Hill Gasoline Co.—Charles S. Jones.
Rice Ranch Oil Co.—E. T. Off.
Roeser & Pendleton, Inc.—M. R. Young.
Shaffer Oil & Refining Co.—F. C. Gordon, R. J. Graf, L. B. Riddle, W. E. Moody, E. J. McKay, B. L. Majewski.
Shell Petroleum Corp.—Richard Airy.
Signal Hill Gasoline Co.—R. W. McKee.
Simms Oil Co.—W. L. Todd.
Sinclair Oil & Gas Co.—W. W. Baker.
Skelly Oil Co.—F. A. Pielsticker, H. M. Stalcup, R. T. Lyons.
Snowden & McSweeney—J. P. Shannon.
South Penn Oil Co.—T. J. Huffman.
Southwest Production Co.—B. P. Stockwell.
Standard Gasoline Co.—H. M. Storey, H. T. Harper, W. H. Berg.
Standard Oil Co.—R. H. McElroy, E. J. Bullock, R. E. Humphreys.
Superior Oil Corp.—G. C. Harned.
Texas Pacific Coal & Oil Co.—O. E. Mitchell.
Tidal Refining Co.—W. C. Franklin.
The Texas Company—T. J. Donoghue, F. T. Manley, G. L. Noble, R. Ogarrio, T. Rieber, W. S. S. Rodgers.
Transcontinental Oil Co.—M. W. Bottomfield, J. M. Holliday, J. C. Adams.
Union Oil Co. of California—W. W. Orcutt, R. D. Matthews, P. N. Boggs.
United Carbon Co.—C. E. Slagle, J. S. Reed, Jr.
United States Refining Co.—William A. Kirk.
West Coast Refining Co.—W. M. Bradford.
Wilcox, H. F., Oil & Gas Co.—F. H. Dunn, M. P. Appleby.
Wiser Oil Co.—M. B. Hutchison, W. L. Sutton.
Wolverine Petroleum Corp.—T. F. Lydon.
†Charles Drader, general manager; R. W. Stephens, vice chairman management committee. W. W. Orcutt, chairman management committee.
‡One 5,000-bbl. plant owned jointly by Superior Oil Corp. and Sterling Oil & Gas Co.

## PLANT CAPACITY NEARS TEN MILLION GALLONS

(Continued from Page 115)

natural gasoline output. At this time the field is allowed to produce less than 20 per cent of its potential crude oil production. This has brought a similar restriction in the gas supply and resulted in a widely fluctuating gasoline production from the completed plants. Due to the unusual conditions existing in the field, a situation which will probably continue for several months at least, several of the manufacturers have been reluctant to enter the field.

However, since the first of the year plant construction has been active. On May 1 nine plants had been completed including two booster plants. Five plants were under construction. The output of the completed plants was around 200,000 gallons daily. With more than 200 wells drilling and locations for approximately 100 more, the Oklahoma City Field will continue active throughout the remainder of the year. As additional wells are completed more plant capacity will be needed. Predictions are heard that the natural gasoline production of the field will exceed 500,000 gallons daily by early fall. At this writing the field offers greater opportunity from the natural gasoline end than any other Mid-Continent section and for that reason the coming year may see Oklahoma again become the leading manufacturer of natural gasoline a position it held until last year when it was passed by California.

### Other States

The capacity of plants east of the Mississippi River has shown little change. Several manufacturers have been able to increase output with more efficient operation replacing old equipment with new. These operators are paying more and more attention to their gasoline plant operations than they have in the past. The attitude of the average eastern company for many years was to consider natural gasoline production as an unimportant phase of crude oil production operations and no attempt was made to secure the maximum yields.

Certain companies have been able to develop markets for by-products in addition to the regular grades of natural gasoline and this has tended to increase the importance of plant operation. There is relatively little new gas available as field development is routine so that the manufacturers usually have to confine their activities to securing more products from the gas obtained in the old fields.

### West of Mississippi

West of the Mississippi River the capacity of Kansas plants has increased from 189,150 gallons daily to 220,800 gallons during the past year. Although no major pools have been developed there has been active development under way in the smaller pools of that State and additions have been necessary to natural gasoline capacity.

The capacity of Wyoming plants is slightly less than it was a year ago and the same is true of Louisiana and Arkansas. The coming year may see the construction of several plants in New Mexico and West Texas. At present only one plant is listed in New Mexico. The construction of another plant has been announced. The State is to be given pipe line outlets connected to the Gulf Coast and it is expected that this will result in the completion of a large number of wells during the year.

### New Products

Aside from the continued expansion in plant capacity, the past year in the nat-

(Continued on Page 137)

Our business is saving time and money for pipe line contractors and owners.

Our policy is to make "RESISTCOR" a synonym for the utmost in service to the pipe line industry.

See our advertisement in the Pipe Line Issue of The Oil and Gas Journal, June 5.

# RESISTCOR

## Engineering Corporation

TULSA MUSKOGEE MEMPHIS HOUSTON

# Performance and Distillation Data

## Doctor Brown Shows Significance of Volatility Characteristic in Motor Fuels Based on Four-Year Research Program

By George Granger Brown*

Although there are, in this country, more than 25,500,000 registered automobiles consuming a total of more than 12,000,000,000 gallons of gasoline each year, surprisingly little exact information is available concerning the desirable characteristics of motor fuel from the standpoint of engine performance. It is generally appreciated that volatility is the most important property of a fuel since it determines the ease with which the motor may be started and the manner in which a car responds to the throttle. Knock rating or nondetonating characteristics are also recognized as the second important characteristic of fuels, since this property allows the fuel to give satisfactory performance in motors of high compression. This property is, however, to a limited extent, directly related to the volatility of the fuel.

In this discussion the conclusion derived from an extensive investigation of the relationship between motor performance and fuel volatility are summarized and presented in such a manner as to make clear the relationship between the A.S.T.M. distillation characteristics and motor performance.

### Ease of Starting

A series of tests with the fuels whose A.S.T.M. distillation characteristics are shown in Figure 1 over the temperature range from —40° to 80°F. give the results as plotted in Figure 2. The straight line in Figure 2 was derived by Cragoe and Eisinger[1] from tests conducted on a motor equipped with a special fuel jet and cranked by a dynamometer. The data plotted in Figure 2 were obtained from a cold motor cranked by the electric starter supplied from the same battery as was used for ignition, and with the motor equipped with the standard carburetor. These data points fall as close to the straight line as do the original data of Cragoe and Eisinger.

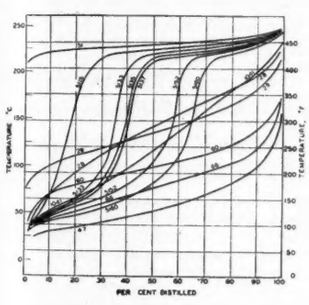



*Figure 1.*

### Starting Characteristics

As has been frequently observed, starting was found to be more difficult at low cranking speeds such as 20 r.p.m. than at the higher speeds such as 140 r.p.m. However, when the air-fuel ratio supplied by the carburetor was computed for these different speeds, it was found that the same number of engine revolutions were required for a given air-fuel ratio at the carburetor regardless of cranking speed. Figure 3 indicates the relationship between engine temperature and A.S.T.M. distillation temperature required for a satisfactory start with different air-fuel ratios supplied at the carburetor. The percentages vaporized on the A.S.T.M. distillation at the indicated temperature are given in columns under the number of engine revolutions required to start.

For example, with an engine temperature of 10° F. and an air-fuel ratio of 1 supplied by the carburetor, the ease of starting is indicated by the percentage vaporized in the A.S.T.M. distillation at 140° F.; 6.5 per cent vaporized at 140° F. will allow a start to be obtained in 20 engine revolutions; 7.6 per cent vaporized will allow the motor to be started in 13 revolutions, and 10 per cent vaporized at 140° F. will allow the motor to be started in 7 revolutions at 10° F. Similarly at an engine temperature of —15° F., 6.5 per cent vaporized at 110° F. in the A.S.T.M. distillation indicates a possible start with 20 engine revolutions, and 10 per cent vaporized at 110° F. means a satisfactory start with 7 engine revolutions.

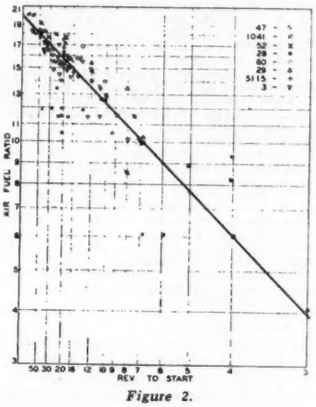



*Figure 2.*

At low engine temperatures, oil or battery conditions limit the maximum number of revolutions in which a start must be obtained. With a low viscosity oil recommended for cold weather operations, it was found impossible to crank the motor after the motor and battery had been standing in a cold room at —10° F. for two hours. In order to obtain a start with Fuel 47 at this temperature, it was necessary to dilute the oil with from 20 to 25 per cent of naphtha. When the oil was diluted to the extent of over 50 per cent, only 19 revolutions could be obtained from a fully charged battery at a temperature of —22° F.

For these reasons it is clear that possible starting at low temperatures demands a fuel so volatile as to start within 10 to 20 revolutions. At higher temperatures 10 or 20 revolutions may be considered an easy start. Furthermore, the lower cranking speed at the low temperature causes a more dilute mixture to be supplied by the carburetor, thereby making starting still more difficult.

### Warming Up and Acceleration

As soon as the motor has been started, the manifold begins to distribute some liquid fuel along the walls of the manifold by the drag of the air-vapor mixture flowing through the manifold. When driving at a fairly constant speed along a level road, the velocity of the air-vapor mixture flowing through the manifold is fairly constant, and the liquid deposited on the walls of the manifold at the carburetor reaches the cylinders about the same rate that it is supplied by the carburetor. Under such conditions the air-fuel ratio supplied to the cylinders is practically the same as that supplied by the carburetor.

During periods of acceleration, however, the amount of fuel delivered to the cylinders immediately after the throttle is suddenly opened is considerably less than that supplied to the manifold by the carburetor. The vaporized fuel carried in the air stream reaches the cylinders almost immediately as does the air. But the liquid fuel flowing along the walls of the manifold moves much more slowly than the air stream and does not reach the cylinders until sometime later (usually about four seconds). For this reason, during the period immediately after the throttle is opened, the cylinders receive all of the air passing through the carburetor, all of the vaporized fuel, but only that liquid fuel which was being distributed along the walls of the manifold before the throttle was opened.

These conditions have been considered by the manufacturers of carburetors, and the modern carburetor is so equipped with accelerating devices that an extra charge of gasoline is injected into the manifold whenever the throttle is suddenly opened. This, in effect, is the same as supplying a richer mixture for a few moments after opening the throttle. If the carburetor is adjusted to deliver an air-fuel ratio of 12 to 1 under steady driving conditions, many carburetors are designed to deliver the equivalent of a 6-to-1 air-fuel ratio immediately after the throttle is opened at low speeds. Other carburetors may be more effective in enriching the mixture at higher speeds than at extremely low speeds. But in practically all cases this characteristic is found to a greater or lesser degree.

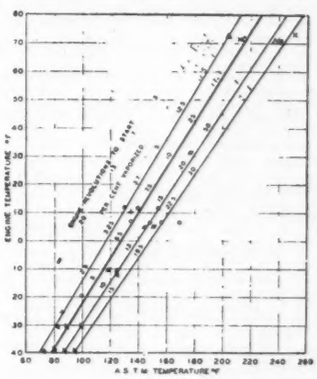



*Figure 3.*

### Mixture Ratio

A mixture ratio of 12 to 1 is required for maximum power. If the air-fuel ratio supplied by the carburetor is 8 to 1, only 66 per cent of the fuel should be vaporized to deliver a 12-to-1 air-fuel ratio at the cylinders even if no liquid fuel was being distributed along the walls of the manifold. Making a small allowance for the liquid distribution, about 65 per cent of the fuel should be vaporized to give the best acceleration when the carburetor supplies an accelerating charge equivalent to enriching the mixture to about 8 to 1. If the fuel is completely vaporized, an air-fuel ratio of 8 to 1 would be supplied to the cylinders immediately after the throttle is opened. Such a mixture is too rich for maximum power and causes the poor acceleration and loss in power frequently observed when using aviation gasoline in modern motor cars.

Similar considerations applied to the warming-up period when the choke is

(Continued on Page 206)

**TABLE 1—THE RELATION BETWEEN A.S.T.M. DISTILLATION AND MOTOR PERFORMANCE AT DIFFERENT ATMOSPHERIC TEMPERATURES**

For modern motor cars equipped with exhaust-heated manifold hot spot, carburetor with effective accelerating device, and radiator shutters.

| | Points on A.S.T.M. distillation with loss added at lower end | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 10% | | 35% | | 60% | | 90% | |
| Atmos. temp. °F. | Minimum °F. | Maximum °F. | ½ minute °F. | 2 minutes °F. | 4 minutes °F. | 8-10 minutes °F. | Minimum °F. | Maximum °F. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 80 | 140 | 230 | 235 | 275 | 275 | 320 | 390 | 450 |
| 50 | 125 | 190 | 200 | 250 | 260 | 310 | 375 | 420 |
| 20 | 110 | 150 | 175 | 230 | 235 | 290 | 350 | 400 |
| —10 | 90 | 100 | 125 | 210 | 180 | 280 | 320 | 400 |

Column (1)—Average atmospheric temperature in which the cold motor is started and operated.

Column (2)—The lowest 10 per cent temperature consistent with easy starting of cold motor, and freedom from vapor-lock with hot motor.

Column (3)—The highest 10 per cent temperature which allows starting and warming up without difficulty under average conditions.

Column (4)—The maximum 35 per cent temperature which allows possible to fairly satisfactory operation without choking about one-half minute after starting, or entirely satisfactory performance with the use of the choke.

Column (5)—The maximum 35 per cent temperature which allows similar operation about 2 minutes after starting.

Column (6)—The maximum 60 per cent temperature giving almost perfect performance without choking about 4 minutes after starting.

Column (7)—The maximum 60 per cent temperature giving perfect performance without choking about 8 to 10 minutes after starting.

Column (8)—The minimum 90 per cent temperature not causing loss in acceleration on warm motor.

Column (9)—Maximum temperatures of 90 per cent now known to be satisfactory under indicated conditions.

**TABLE 2**

For cars not equipped with radiator shutters, and supplying less heat to the intake manifold, or with carburetor which supplies only a limited accelerating charge.

| | 10% | | 35% | | 65% | | 90% | |
|---|---|---|---|---|---|---|---|---|
| Atmos. temp. °F. | Minimum °F. | Maximum °F. | ½ minute °F. | 4 minutes °F. | 8-10 minutes °F. | Minimum °F. | Maximum °F. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 80 | 135 | 230 | 235 | 280 | 300 | 320 | 450 |
| 50 | 115 | 190 | 190 | 240 | 260 | 250 | 410 |
| 20 | 100 | 150 | 150 | 200 | 200 | 180 | 390 |
| —10 | 85 | 100 | 100 | 160 | 120 | 120 | 370 |

Column (1)—Average atmospheric temperature in which the cold motor is started and operated.

Column (2)—The lowest 10 per cent temperature consistent with easy starting of cold motor, and freedom from vapor-lock with hot motor.

Column (3)—The highest 10 per cent temperature which allows starting and warming up without difficulty under average conditions.

Column (4)—The maximum 35 per cent temperature which allows possible to fairly satisfactory operation without choking about one-half minute after starting, or entirely satisfactory performance with the use of the choke.

Column (5)—The maximum 35 per cent temperature which allows similar operation about 4 minutes after starting.

Column (6)—The maximum 65 per cent temperature giving perfect performance without choking about 8 to 10 minutes after starting.

Column (7)—The minimum 90 per cent temperature not causing loss in acceleration on warm motor.

Column (8)—Maximum temperatures of 90 per cent now known to be satisfactory under indicated conditions.

*Professor of chemical engineering, University of Michigan; director of research for the Natural Gasoline Association of America.

[1]Trans. Soc. Auto. Eng., Volume 22, Part 1, Page 1, 1927.

# Superintendents of Gasoline Plants

## 1930 Survey Includes Names of Operators. Companies Having Chief Engineers and Chief Chemists Listed

In connection with its annual survey of the natural gasoline industry, The Oil and Gas Journal this year asked for the names of plant superintendents, chief engineers and chief chemists. A large number of companies do not employ engineers and chemists. The following report gives the information obtainable by companies:

A

Alum Rock Gas Co., National Transit Bldg., Oil City, Pa.:
Roy Klingler, Knox, Pa.
Roy Klingler, chief engineer.
Amerada Petroleum Corp., 65 Broadway, New York, N. Y.:
W. H. Williams, Box 299, Ardmore, Okla.
J. W. Kearney, Box 68, Healdton, Okla.
I. N. Journeycake, Box 1028, Okmulgee, Okla.
V. W. Roberts, Drawer C, Fry, Tex.
E. F. Tidwell, Box 596, Earlsboro, Okla.
A. H. Evans, Box 231, Bowlegs, Okla.
E. G. Lyons, Harjo, Okla.
T. R. Berton, Oklahoma City, Okla.
H. W. Harts, chief engineer.
Arab Gasoline Corp., Eastland, Tex.:
R. S. Bailey, Eastland, Tex.
Arkansas Natural Gas Corp., Ardis Bldg., Shreveport, La.:
L. D. Phillips, Drawer D, El Dorado, Ark.
C. Zeppa, Box 374, Louann, Ark., chief engineer.
S. Cunningham, Drawer D, El Dorado, Ark., chief engineer.
E. P. Farmer, Box 272, Monroe, La., chief engineer.
L. A. Clements, Box 668, Homer, La., chief engineer.
T. F. Gordon, Box 1734, Shreveport, La., chief engineer.
John Mobley, chief engineer.
Associated Producers Co., 11 Broadway, New York, N. Y.:
W. S. Corwin, Robinson, Ill.

B

Barco Gasoline Co., Alhambra Square, Tulsa:
J. H. Archer, Wirt, Okla.
Barnsdall Oil Co., Petroleum Bldg., Tulsa:
J. O. Green, Box 518, Earlsboro, Okla.
T. A. Rush, Box 518, Earlsboro, Okla.
R. W. Shannon, Box 856, Beggs, Okla.
Fred Tumstall, Box 856, Beggs, Okla.
C. C. Voris, Box 2033, Tulsa, Okla.
E. E. Troyer, Box 224, Avant, Okla.
G. R. Nicholas, Box 228, Osage, Okla.
F. C. Goughler, Drawer A, Barnsdall, Okla.
A. H. Sayler, R.R. 2, Box 173, Oxford, Kans.
Barnsdall Oil Co. of California, Commercial Exchange Bldg., Los Angeles, Calif.:
R. L. Fortine, Goleta, Calif.
G. R. Hoffman, chief chemist.
R. B. Hastings, chief engineer.
Big Lake Oil Co., 223 Fourth Ave., Pittsburgh, Pa.:
L. G. Thompson, Texon, Tex.
J. C. Moore, chief chemist.
J. D. Miller, Jr., chief engineer.
E. H. Brady, Tulsa:
E. A. Moss, chief engineer.
Breckenridge Gasoline Co., 2313 Madison Ave., Toledo, Ohio:
R. L. Ponsler, Cisco, Tex.
A. Bruner & Co., 312 Wright Bldg., Tulsa:
William Avra, R.R. 1, Lawrenceville, Ill.

C

California United Gasoline Corp., 500 C. C. Chapman Bldg., Los Angeles, Calif.:
Ralph P. Dudley, Coleman, Tex.
Charles Fisher, Los Angeles, Calif.
Calumet Oil Co., 517 W. Hellman Bldg., Los Angeles, Calif.:
J. C. Armstrong, Fillmore, Calif.
Canadian River Gas Co., Independence, Kans.:
G. A. Woods, Amarillo, Tex.
Carbide & Carbon Chemicals Corp., 30 East Forty-second St., New York, N. Y.:
J. W. McLaughlin, South Charleston, W. Va.:
F. W. Hineline, Clendenin, W. Va.
C. M. Stuter, Hastings, W. Va.
Dr. C. O. Young, chief chemist.
H. E. Thompson, chief engineer.
Carson Carbon Co., 432 New St., Cincinnati, Ohio:
C. V. Teegerstrom, Collinston, La.
Carter Oil Co., Exchange Bank Bldg., Tulsa:
F. W. Bruner, Carter Nine, Okla.
George Cain, Box 787, Wilson, Okla.
F. L. Abraham, Box 758, Cromwell, Okla.
A. E. Perry, Route 2, Seminole, Okla.
L. S. Edgett, Columbine, Wyo.
G. A. Shaner, chief chemist.
Chestnut & Smith Corp., 624 S. Cheyenne Ave., Tulsa.:
C. M. Edwards, Box 788, Ranger, Tex.
Otto Peters, Drawer OO, Breckenridge, Tex.
W. W. Smyers, Kiefer, Okla.
W. R. Lentz, chief chemist.
F. G. Yonker, chief engineer.
Clinger Oil & Gas Co., Tidioute, Pa.:
C. R. Boyd, Truemans, Forest County, Pennsylvania.
J. E. Peterson, R.R. 3, Tidioute, Pa.
Coline Gasoline Corp., 301 Kerckhoff Bldg., Los Angeles, Calif.:
D. R. Van Gorder, Box 728, Torrance, Calif.
J. L. Black, Box G-2, Ventura, Calif.
F. E. Bradley, chief chemist.
Colonial Oil Co., 402 Severy St., Parkersburg, W. Va.:
W. P. Rankin, Lima, W. Va.
Columbian Gasoline Corp., Monroe, La.:
H. G. Stevenson, Shamrock, Tex.
R. E. Biggs, Archibald, La.
J. S. Dunn, Swartz, La.
J. P. Savell, Fairbanks, La.
B. F. Spigenor, Fairbanks, La.
J. F. Morris, Fairbanks, La.
H. S. Peters, Bastrop, La.
P. F. Crow, Lefors, Tex.
G. H. Stevens, Lefors, Tex.
J. P. Cox, Lefors, Tex.
R. H. Cobb, Monroe, La.
H. J. Hunter, chief chemist.
Consolidated Gasoline Co., 2313 Madison Ave., Toledo, Ohio:
R. L. Ponsler, Cisco, Tex.
Continental Oil Co., Continental Bldg., Ponca City, Okla.:
J. C. Wood, Ponca City, Okla.
R. A. Carter, Burkburnett, Tex.
D. R. Sparr, Wellington, Colo.
A. Henriksen, chief chemist.
E. O. Bennett, chief engineer.
Cosden Oil Co., Electric Bldg., Fort Worth, Tex.:
Tom Bryan, Lovell, Okla.
Crosbie & Moran, Inc., 1810 Exchange Bank Bldg., Tulsa:
R. F. Brown, Box 715, Earlsboro, Okla.
D. B. Young, Box 247, Marshall, Okla.
L. D. Hare, Box 1727, Konawa, Okla.
Crosbie, Porter & Martin, Inc., 402 Thompson Bldg., Tulsa:
S. M. Barrett, Jr., Okemah, Okla.
S. M. Barrett, Jr., chief engineer.
C. R. Daugherty & Co., Y.M.C.A. Bldg., Butler, Pa.:
H. C. Conley, R.R. 2, Oakdale, Pa.

D

Desdemona Gasoline Co., 407 Capps Bldg., Fort Worth, Tex.:
I. N. Williams, Desdemona, Tex.
L. E. Hirt, chief chemist.
I. N. Williams, chief engineer.
Devonian Oil Co., 618 Exchange Bank Bldg., Tulsa:
C. C. Woodson, Box 106, Kellyville, Okla.
A. Oldham, Box 522, Stroud, Okla.
Ben Schockman, Box 331, Chickasha, Okla.
E. S. Calvert, chief engineer.
Dixie Oil Co., Inc., Philcade Bldg., Tulsa:
R. W. Davis, Gilliam, La.
Dixon Creek Oil Co., Amarillo Bldg., Amarillo, Tex.:
C. H. Hunter, Box 1295, Borger, Tex.
W. E. Share, chief chemist.
C. H. Hunter, chief engineer.

E

East Ohio Producing & Refining Co., 1405 E. Sixth St., Cleveland, Ohio:
C. Daiber, Doylestown, Ohio.
Charles F. Turner, chief chemist.
J. F. Gray, chief engineer.
Empire Gas & Fuel Co., Ltd., Wellsville, N. Y.:
Guy Harder, Andover, N. Y.
Empire Oil & Refining Co., Bartlesville, Okla.:
L. Toland, Madison, Kans.
E. Williams, R.F.D. Teterville, Hamilton, Kans.
L. A. Webster, Eureka, Kans.
C. E. Aydelotte, R.F.D. Teterville, Hamilton, Kans.
E. R. Beckord, Madison, Kans.
J. A. Dowler, Sallyards, Kans.
M. H. Haynes, Caney, Kans.
Dick Rodgers, Wichita, Kans.
E. A. Wakefield, Wellington, Kans.
W. H. Yingling, Arkansas City, Kans.
R. W. Johnston, Tallant, Okla.
Clay Briggs, chief engineer.
Equitable Gas Co. and Pittsburgh & West Virginia Gas Co., Pittsburgh, Pa.:
Archie Stutler, Hundred, W. Va., care of Pittsburgh & West Virginia Gas Co.
G. M. Myers, Rogersville, Pa., care of Equitable Gas Co.
E. O. Bouch, R.F.D. 5, Clarksville, Pa., care of Equitable Gas Co.

F

Field, O. C., Gasoline Corp., 609 Board of Trade Bldg., Los Angeles, Calif.:
J. C. Burks, Los Angeles, Calif.
Theodore M. Ditgen, Box 832, Maricopa, Calif.
Fleming, J. E., Titusville, Pa.:
B. H. Crippen, Grand Valley, Pa.

G

General Petroleum Corp. of California, Higgins Bldg., Los Angeles, Calif.:
S. J. Dickey, consulting engineer.
George F. Getty Gasoline Co., 1060 Subway Terminal Bldg., Los Angeles, Calif.:
Ben A. Kochler, Box 715, Santa Fe Springs, Calif.
C. O. Libbey, chief chemist.
J. J. Murphy, chief engineer.
Gillespie & Moran, Inc., 1534 Hunt Bldg., Tulsa:
R. G. Dwen, Jr., Box 84, Pearson, Okla.
Carl H. Tucker, chief chemist.
R. G. Dwen, Jr., chief engineer.
Forrest E. Gilmore Co., 1208 Public Service Bldg., Portland, Ore.:
G. A. Pearson, Box 447, Sasawka, Okla.
K. W. Bunch, Box 1986, Pampa, Tex.
S. T. Beauchamp, Box 549, Mineral Wells, Tex.
M. C. Lupfer, Box 1105, Sapulpa, Okla.
C. H. Bridges, Box 253, Lima, Okla.
C. C. Cherry, Box 253, Lima, Okla.
H. M. Hogue, Box 417, Weleetka, Okla.
H. A. Froelich, Box 426, Allen, Okla.
B. C. Wedelin, Ripley, Okla.
B. E. Jones, Box 466, Blackwell, Okla.
F. A. Green, Box 16, Hazel, Okla.
V. R. Pickens, Box 91, Snomac, Okla.
Gilmore Gasoline Plant No. 1, 2423 East Twenty-eighth St., Los Angeles, Calif.:
W. Shellshear, Walnut Ave. and Hill St., Long Beach Calif.
L. Schandoney, chief chemist.
E. Newman, chief engineer.
Graham Oil & Gas Co., Graham, Tex.:
G. L. Marcham, Graham, Tex.
Grimes Gasoline Co., World Bldg., Tulsa:
J. D. McQuillen, Okemah, Okla.
Joe Gibson, Weleetka, Okla.
John Brown, Weleetka, Okla.
R. F. Chisholm, Keystone, Okla.
Fred Railsback, Mannford, Okla.
Robert A. Clark, Drumright, Okla.
Dick Beatty, chief chemist.
J. D. McQuillen, chief engineer.
Grimes, Otha H. and Roy O. Neal, 601 World Bldg., Tulsa:
R. A. Clark, Box 513, Drumright, Okla.
Gulf Production Co., Petroleum Bldg., Fort Worth, Tex.
T. W. Rhoads, chief engineer.
Gulf Refining Co. of Louisiana, Ardis Bldg., Shreveport, La.:
W. F. Harding, Box 158, Mooringsport, La.
J. F. Doerge, Box 578, Homer, La.
E. F. Collins, Drawer G, El Dorado, Ark.

H

Hales & Cassidy, 1208 Hales Bldg., Oklahoma City, Okla.:
Charles H. Clark, Cushing, Okla.
Gus Matlock, chief engineer.
Hanlon Gasoline Co., 301 E. First St., Tulsa:
J. M. Holloway, Eliasville, Tex.
J. P. Gilchrist, Breckenridge, Tex.
A. A. Hardee, Breckenridge, Tex.
Charles Stegmiller, Breckenridge, Tex.
C. E. Benham, chief chemist.
Hapgood, Roswell T., & Co., 705 Kanawha Natl. Bank Bldg., Charleston, W. Va.:
D. T. McClure, 922 Garden St., Charleston, W. Va.
Wiley Price, Cedar Grove, W. Va.
Harland Oil Co., Drawer A, Wolco, Okla.:
D. C. Bohnsack, Wolco, Okla.
F. R. Jackson, Barnsdall, Okla.
Heck, W. B., & Co., Box 164, Owensboro, Ky.:
W. D. Kelsay, Steubenville, Ohio.
Henderson Co., The., 818 Bank of Commerce Bldg., Tulsa:
J. O. Huffman, Box 847, El Dorado, Ark.
W. G. Palmer, Sanford, Tex.
H. O. Bolen, El Dorado, Ark.
W. R. Williams, chief chemist.
W. G. Palmer, chief engineer.
Herkness, J. Smylie, Tenth and Lombard Sts., Philadelphia, Pa.:
A. J. Flint, Bastrop, La.
Hickey & Rieg, Clarendon, Pa.:
John M. Hickey, Clarendon, Pa.
O. M. Magee, chief engineer.
Highway Gasoline Co., 410 Roosevelt Bldg., Los Angeles, Calif.
Guy L. Davis, Box 1025, Ventura, Calif.
Hirt-MacDermott & Co., 407 Capps Bldg., Fort Worth, Tex.:
I. N. Williams, Desdemona, Tex.
L. E. Hirt, chief chemist.
I. N. Williams, chief engineer.
Honolulu Consolidated Oil Co., 215 Market St., San Francisco, Calif.:
E. R. Pratt, Taft, Calif.
S. Richmond, Taft, Calif.
Hope Construction & Refining Co., 545 William Penn Way, Pittsburgh, Pa.:
L. L. Tonkin, Box 656, Clarkesburg, W. Va.
S. C. Preston, William Penn Way, Pittsburgh, Pa.
J. B. Garner, chief chemist.
H. C. Cooper, chief engineer.
Huber, J. M., Co. of Louisiana, Inc., 460 W. Thirty-fourth St., New York, N. Y.:
E. M. Eckart, Swartz, La.
R. D. Morgan, Swartz, La.
I. Drogin, chief chemist.
H. W. Price, chief engineer.
Hudson Oil Co., 402 Avery St., Parkersburg, W. Va.:
John L. Davis, Cairo, W. Va.
Humble Oil & Refining Co., Humble Bldg., Houston, Tex.:
Frank Bass, Bellville, Tex.
G. L. McCormick, Iraan, Tex.
R. W. Way, Breckenridge, Tex.
W. A. Drake, Desdemona, Tex.
John Willis, Burkburnett, Tex.
M. A. Mills, Corsicana, Tex.
R. W. Potter, Rising Star, Tex.
W. W. Reed, Bangs, Tex.
E. L. Whitacre, Luling, Tex.
Fred Osborn, Neches, Tex.
F. M. Beebe, Vernon, Tex.
Hunter, Livingston L., Trust, Tidioute, Pa.:
George B. King, Tidioute, Pa.
Imperial Oil & Gas Products Co., 1104 Union Bank Bldg., Pittsburgh, Pa.:
J. C. Westfall, El Dorado, Ark.

I

Independent Oil & Gas Co., Philtower Bldg., Tulsa:
R. L. Ford, Box 1092, Seminole, Okla.
R. S. Wyrick, Box 398, Madison, Kans.
O. C. Linton, Box 474, Slick, Okla.
W. W. Ford, Box 1113, Wewoka, Okla.
H. W. Sullivan, chief chemist.
M. A. Shelthrop, chief engineer.
Indian Territory Illuminating Oil Co., Bartlesville, Okla.:
H. Wingo, Oklahoma City, Okla.
C. Johnson, Oklahoma City, Okla.
D. G. Hefley, chief chemist.

J

Jefferson Gasoline Co., R.R. 1, Rayland, Ohio:
J. F. Carson, R.R. 1, Rayland, Ohio.

K

Kansas Gasoline Co., Box 1991, Tulsa:
J. L. Looney, Box 1007, Winfield, Kans.
J. L. Looney, chief engineer.
Kentucky Pipe Line Co., 311 W. Chestnut St., Louisville, Ky.:
H. D. Robb, Winchester, Ky.
Kewanee Oil & Gas Co., 2317 Fidelity-Phila Trust Bldg., Philadelphia, Pa.
T. B. Steele, Robinson, Ill.

L

La Salle Petroleum Co., 608 Wright Bldg., Tulsa:
W. B. Fisher, Burkburnett, Tex.
W. W. Watson, chief chemist.
W. B. Fisher, chief engineer.
Lebow, C. H., 508 Atlas Life Bldg., Tulsa:
William Simpson, Box 83, Drumright, Okla.
Liberty Oil & Gas Co., 343 Pa. Avenue W. Warren, Pa.:
William J. Wagner, Oblong, Ill.
Lomita Gasoline Co., Twenty-ninth and Orange Ave., Long Beach, Calif.
L. V. Cassaday, Box 669, Long Beach, Calif.
W. R. Davis, chief chemist.
J. A. Campbell, chief engineer.
Lone Star Gas Co., 1915 Wood St., Dallas, Tex.:
Harry Wheeldon, Gordon, Tex.
J. A. Bates, R.R. 1, Cisco, Tex.
C. R. Rogers, Hollis, Okla.
J. M. Kindle, Petrolia, Tex.
Bob Hinman, Box 882, Ranger, Tex.
J. E. Johnson, Box 567, Gainesville, Tex.
Cecil Louks, Box 488, Ranger, Tex.
J. F. Byas, Brazos, Tex.
J. T. Hubbard, Sipes Springs, Tex.
Edgar Huffman, Box 398, Desdemona, Tex.
J. L. Foster, chief engineer.
Louisiana Oil Refining Corp., First Natl. Bank Bldg., Shreveport, La.:
W. W. McElroy, Box 216, Cotton Valley, La.
A. W. Trusty, chief chemist.
H. R. Smith, chief engineer.

M

Magnolia Petroleum Co., Dallas, Tex.:
W. J. King, Box 638, Yale, Okla.
O. B. Zeek, Box 545, Wewoka, Okla.
A. K. Quandel, Box 277, Earlsboro, Okla.
J. A. Nicholson, Box 277, Wirt, Okla.
W. G. Baker, Box 848, Pampa, Tex.
W. B. January, Box 856, Burkburnett, Tex.
I. S. Hull, Drawer M, El Dorado, Ark.
E. L. Nelson, Gilliam, La.
M. C. Aker, Shamrock, Tex.
R. P. Smith, Box 77, St. Louis, Okla.
E. L. Hamilton, Drawer H, Duncan, Okla.
V. L. Dickinson, Box 848, Pampa, Tex.
G. C. Rainey, Box 579, Westbrook, Tex.
E. H. Cheever, Drawer M, Olden, Tex.
C. V. Edwards, Jr., Harmon, La.
William Haskinson, division superintendent Oklahoma, Box 971, Oklahoma City, Okla.
D. E. Farris, division superintendent Louisiana-Arkansas, Box 1406, Shreveport, La.
H. E. Snyder, division superintendent Texas, Drawer M, Olden, Tex.
K. S. Woolery, chief engineer.
Mahutska Oil Co., Robinson State Bank Bldg., Robinson, Ill.:
S. H. Correll, R.F.D., Robinson, Ill.
Fred Boyd, R.F.D., Oblong, Ill.
Midco Oil Corp., Midco Bldg., Tulsa:
M. J. Carlson, Oilton, Okla.
H. Cole, Dewey, Okla.
Mid-Kansas Oil & Gas Co., Findlay, Ohio:
W. E. Smith, Box 277, Eliasville, Tex.
I. R. Collier, chief engineer.

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## PLANT CAPACITY NEARS TEN MILLION GALLONS

(Continued from Page 129)

ural gasoline industry has been notable due to the development of new products. In the case of several companies this exceeds in importance, their growth in capacity.

By improved fractionating methods these companies have been able to segregate propane, butanes, and pentanes from the heavier fractions. These new products have been the basis for the so-called liquefied gases which are being used as fuel for homes and as special industrial fuels. The market for these products is expanding rapidly and promises to become an important factor in the earnings of several manufacturers before the end of the year.

Improvements have been made in other phases of operation based on a greater knowledge of the hydrocarbon properties of gasoline fractions. A fraction used as a solvent is also being manufactured and other products will be manufactured as commercial markets are secured.

Considerable attention is being paid in the high gravity crude oil fields, particularly the Oklahoma City Field, to crude oil stabilizing units. These plants, known as rerun units, remove the lighter fractions from the crude oil by distillation to secure a crude of uniform gravity which does not have the highly volatile fractions which vaporize readily when left in the crude oil. While this operation overlaps refinery processing, it is being carried on by natural gasoline manufacturers and the product is being sold by them.

The application of the gas lift in the production of crude oil is becoming more important to the natural gasoline manufacturer. It is tied-in with the natural gasoline plant operations in various ways. Usually it has tended to increase the production of natural gasoline but in other cases it has decreased output.

## THE MARKETING OF NATURAL GASOLINE

(Continued from Page 110)

chases the largest amount of natural gasoline produced.

The refiner contends that it is unprofitable for him to use natural gasoline of present specifications if the cost of our product is higher than he is obtaining for U. S. Motor at his plant. Another contention is that he must sell his product without natural gasoline unless he can make a profit over and above the profit he receives for his own product. Otherwise, he would become only a salesman for natural gasoline without profiting thereby. On the other hand, the natural gasoline manufacturers believe that the improved quality of the refiners' gasoline in volatility alone should warrant more than this, especially since much of the natural gasoline used is in the refiners' premium fuel rather than U. S. Motor. But we must fact the fact that the increasing volume of natural gasoline available to the refiner is not conducive to a strictly seller's market and until such time as the refiner is convinced that our contentions as to the value of natural gasoline are true is it not better to encourage the constant use of our product by meeting him at least halfway in the matter of price?

### Storage as Stabilizer

The Mid-Continent division of our industry has, with the splendid leadership of the largest manufacturer in the business, accomplished much in stabilizing the price of our product during the past year and the sentiment among several manufacturers who were reluctant before has now changed and more thought is being given to increasing storage facilities for their product. Much more good could be accomplished by the Mid-Continent manufacturers if storage for only 15 days' production was installed at each plant. Of course storage for one month's production would be of considerable help and would be the means of stabilizing the market and preventing ruinous prices during a slow period. There is today entirely too much natural gasoline being marketed and sold at prices below the cost of production due mostly to insufficient storage at gasoline plants. The result of added storage would mean that the manufacturer could ask a fair price for his product in proportion to the price of export and domestic gasoline.

In analyzing the shipments and consumption of natural gasoline in the various states for the first three months of this year the Bureau of Mines report shows some very illuminating facts. For instance, there were 66,000,000 gallons of natural gasoline used by our eastern refineries in excess of the amount manufacturers in the East were able to produce. These figures show the bulk of this gasoline was purchased from California. Further details regarding these figures are shown in a condensed form, Table No. 1 of this paper. We believe these figures will be of interest to you, in that they show conclusively that the marketing territory for the manufacturer as well as the refiner in the Mid-Continent Field is being restricted.

We could go on into detail for some time discussing the changes that are taking place but more important is what are we doing about it? We all know that California is and will continue to be manufacturing larger quantities of natural gasoline, and since this is a fact we think ahead and prepare for the future. The refiners with their cracking processes and recovery plants are becoming more and more independent of the natural gasoline manufacturer each year. The speaker here makes the prediction that the Mid-Continent natural gasoline industry will within the next five years be marketing the bulk of its gasoline as a stabilized product. No operator can continually manufacture gasoline at a loss, and this is what the majority of the small manufacturers have been doing for the past two years.

### On Threshold of Possibilities

Regardless of the progress that has been made in the development of new products from natural gasoline we are only on the threshold of the possibilities for our industry. Realizing that it will take years to gradually broaden our markets, both foreign and domestic, for a premium grade of natural gasoline, we must continue to develop our present outlets until such a time as we will not be dependent entirely on the domestic refiners to utilize our product, perhaps at a price below our operating cost.

This is no condemnation of the refiner. If he feels that our product must be delivered to his plant at a certain price, depending on what he receives for his finished material, he is justified in protecting his own interest. In the meanwhile, a great deal has been done by this association to dispel the lack of information and antipathy of the refiner for natural gasoline and more constructive work is yet to come from the same source, but the fact still remains that their use of our product is almost directly proportionate to price. This change, of course, must and will take time, but much progress has already been made by several leading manufacturers.

Central stabilizing plants have been constructed by several companies interested in broadening the market for stabilized natural gasoline, and while this is only the beginning, the results have been very beneficial to the industry as a whole, for as some manufacturers have been slow about installing sufficient storage facilities, they have likewise been forced to dispose of their product at low prices to those manufacturers better equipped to handle the gasoline. The market for the by-product of natural gasoline is gradually widening and when the industry realizes more fully that the product it is now making and selling at a low price is a valuable petroleum derivative and can be used in time at premium prices, then will more effort be made to manufacture a product that will command a higher price.

### Summary and Conclusion

In summarizing the above remarks, to improve our market, first: We should therefore endeavor to build more storage at those plants where storage is inconspicuous and which would avoid to a certain extent moving gasoline on a distressed market; second, we manufacturers should give more serious thought and consideration to the stabilization of our product and the market for the finished gasoline; third, to develop our present possible market outlets until such a time as the demand for stabilized gasoline will absorb our excess natural gasoline production so that we may enjoy a better return for our product.

We wish to mention here that in addition to Table No. 1 we have compiled figures showing for the past 10 years, beginning 1920 and ending 1929, the percentage of natural gasoline production each year to the total supply of all gasoline, which is shown as Table No. 2. Table No. 3 shows the price of natural gasoline in relationship to 58-60 U. S. Motor gasoline for the same period of time. Table No. 4 illustrates the total per cent of natural gasoline increase as compared with refinery gasoline for the past 12 years.

Before concluding it might be of interest to know that there are about 14 companies who market natural gasoline direct in the Mid-Continent Field. Of these 14, 6 companies control the major portion of the total output. The remaining eight control directly or indirectly approximately 1,000 cars per month. As a whole the integrity and character of the men engaged in the sale of natural gasoline is as fine and upright as any group in the oil business. However, there is one general weakness among sales managers and that is too much reliance on the prices being reported by one of the leading oil price publications. The fault is not that of the publication but the individual who relies on the publication to tell him what to quote for his product. In other words, it is a case of the tail wagging the dog instead of the dog wagging the tail.

## KENTUCKY-TENNESSEE

(Continued from Page 78)

seats, are working hard to get a supply of gas, to say nothing of many of the other counties in the western and southwestern part of the State, as the Missouri-Kansas Pipe Line Co. is rapidly securing franchises to supply the large cities with natural gas. Kentucky natural gas is also going into the larger towns in the southern portion of Indiana.

### Ohio County Wells

One of the best of recent completions is the Cumberland Petroleum Co.'s No. 1 on the W. H. Hamilton farm, in the Buford Field, just north of the Morgan farm where some good wells were found several months ago, and to the northwest of the Barnett Creek Church, another of the Stray sand producing areas of the county. The Hamilton well is credited with an initial production of 150 bbls.

Ohio County was hard hit the past week by numerous dry holes which usually occur surrounding the Stray sand pools. E. G. Purtle and others found a duster in No. 7 on the Charles Roach north 130-acre farm, in the Whittaker Pool. In this well a string of 635 feet of casing was set and dry at a total depth of 681 feet. H. C. Smith Co.'s No. 1 Isaac Findley was a dry hole at 650 feet and Hupp, Duff and others' No. 3 Arthur Whitehouse was dry at 650 feet. Wade & Moore's No. 1 in the southeast corner of the Ed Bickett, was dry, as was James C. Ellis and others' No. 1 in the southeast corner of the A. G. Wright farm. Petroleum Exploration Co. got a dry hole in No. 1, 1,500 feet from the south and west lines of the J. S. Huff farm.

National Deposit Bank Co. and others' No. 7 on the J. S. Colyer 100 acres in the Colyer Pool, pumped 2 bbls. initial in the Jett sand.

### Henderson County Wells

Seven completions are reported from the Niagara Field in Henderson County. Jerry Oil & Gas Co.'s No. 3 well, 1,000 feet from the north line and 200 feet from the south line of the Basil Griffin farm, Niagara Pool, pumped 8 bbls. initial.

Niagara Oil & Gas Co.'s No. 2 in the southwest corner of the Charles M. Goldsy farm, 1½ miles northwest of the town of Niagara, pumped 10 bbls. the first 24 hours.

John B. Lyddone, trustee, drilled in an initial producer of 30 bbls. in No. 3 well, 1,000 feet from the south line and 200 feet from the east line on the C. M. Gish 200 acres. Thomas Wittmer's No. 5 on another of the C. M. Gish farms, produced 30 bbls. initially and is 600 feet from the north line and 200 feet from the south line of the lease. Wittmer Oil & Gas Co.'s No. 6 in the southwest corner of the J. B. Crosby farm, produced 5 bbls. Fred Ingstrom drilled a dry hole in the northeast corner of the Floyd Crofton farm, in the Niagara Field.

### Scattered Completions

Ten miles northwest of Bowling Green, in Warren County, Johnson & Julian's test on the E. Morgan 50 acres, developed a duster at 560 feet.

In Daviess County, Harry Russell's test, 200 feet from the north line and 600 feet from the east line of the Tracey edge farm, 3 miles south of Whitesville, was dry at 675 feet. In this hole a string of 626 feet of casing was set. Same party drilled a dry hole on the J. Howard farm, about 2 miles north of the Jones Pool, where 710 feet of casing was set and dry at 736 feet. Creek Drilling Co. reports a dry hole in No. 1 on the Parrish Wheeler farm, at 1,100 feet.

Unknown parties have what is reported as a 30-bbl. initial producer on the Leigh farm, in the Pellville Field, in the southern part of Hancock County.

In the Calhoun Field of McLean County, Murray, Bolling and others' No. 1 on the Mame Whittaker farm, in the immediate vicinity of the McManama Pool, is reported good for around 25 bbls. initial.

The Ohio Oil Co.'s wildcat on the Ransome Lee farm, 3½ miles southeast of Greenville, and 1½ miles south of the town of Depoy, in Muhlenberg County, is reported showing around 1,500,000 feet of gas.

### Field Pickups

The Henderson Oil Syndicate's No. 2 on the Henry Fryer farm, in the Niagara Field of Henderson County, is reported producing 20 bbls. of oil and about 600,000 feet of gas, with No. 3 starting on the same lease. Same syndicate is starting No. 2 on the Mun land, same field.

Caudill and others are drilling on the John Ditto farm, in the Calhoun Field of McLean County.

Root, Hupp & McClintock are drilling on the James Ray farm, in the Cane Run area of Ohio County. Cumberland Petroleum Co. is drilling No. 1 Dodson in the Buford Pool, also drilling on the McCarthy farm, which adjoins the Dave Breeks farm, where a good well was found a short time ago. Rhodes, Swarthout and others are drilling on the P. D. Maddox 244 acres in the Maxwell Pool. Louisville Gas & Electric Co. is drilling No. 8 on the R. A. Miller 175 acres in the Haynesville area of Ohio County.

Bolan and others' No. 1 J. G. Howard farm, in Daviess County, was dry and abandoned at 1,500 feet. Evans & Garrison's No. 2 J. C. Malone, Utica Field, Daviess County, produced an initial of 8 bbls. after given a shot. James C. Ellis and others' No. 1 C. Drake farm, in Ohio County, was dry and abandoned.

### Oil Runs

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during the month of April, 1930, as follows: 302,342.42 bbls. Total runs made by the Cumberland Pipe Line Co. in the eastern Kentucky fields for April totaled 184,988.20.

## APRIL MOTOR CAR OUTPUT

NEW YORK, May 17.—Motor car production in April is estimated at 460,343 units by the National Automobile Chamber of Commerce, compared with the record total of 663,811 shipped in April, 1929, and 434,315 in April, 1928.

## ROCKY MOUNTAIN AREA

(Continued from Page 72)

blocks and do not have to drill any offsets and wells are produced in accordance with demand for crude. There is little drilling in the county at this time. Dorothy Oil Co.'s No. 2 Goede, NW SE, Section 29-30-9, Blanco district, is bottomed at 1,425 feet and running 5⅜-inch casing.

**Socorro County**

Lockhart & Co.'s No. 2 Stackhouse, SE SW, Section 14-3s-6e, is running 2,600 feet of 5⅜-inch casing and will make it into a Pennsylvanian test. Western Drilling Co.'s contract was completed at 2,500 feet.

**Hildalgo County**

Phillips, Owenby and others' No. 1 State, SE SE, Section 14-22-20, is bottomed at 1,540 feet in sand with show of gas through 1,100 feet of water. Casing was set to shut off the water.

**Sandoval County**

Mayflower Oil & Gas Co.'s No. 1 Marion, NE SE, Section 23-30-2w, is drilling at 1,900 feet. The 6⅝-inch was set at 1,800 feet. The objective is the upper Mesa Verde.

**Torrance County**

J. B. Witt Oil Co.'s No. 1 Kutchin, Section 12-7n-7e, is drilling at 565 feet. The Pennsylvania was topped at 500 feet.

### UTAH

Midwest Refining Co.'s No. 31 Pary, SW cor. Section 14-39-1w, Butler Valley, Kane County, Utah, for the account of Utah Oil Refining Co., is drilling in hard lime at 3,882 feet. It is still in the Kaibab formation, equivalent to the Big lime of Texas, and has approximately 300 feet to go before passing out of that formation. Utah Southern Oil Co.'s No. 1 State, SW SE Section 26-21-23, Cisco district, Grand County, is drilling at 2,291 feet in a cavy shale conglomerate, probably the beginning of the angular unconformity anticipated in this test of the shore line immediately below the red beds. The red beds were topped at 2,085 feet and bottomed at 2,256 feet. Diamond Oil Co.'s No. 4, SE NW Section 16-8s-5e, Utah County, is again making hole below 1,700 feet after being down for the winter. It is drilling in hard blue lime and at 1,720 feet reported a show of oil and gas.

### COLORADO

There were no completions reported in Colorado and only one new operation was started, the South Park Oil Co.'s No. 1 Milliken, NW cor. SE Section 13-8s-76, on on the Jefferson structure in Park County. Spudding is expected to start next week. This well probably will hold the record for altitude as it is around 9,000 feet above sea level. Jefferson structure is in South Park, one of the several big basins in the State surrounded by mountains. North Park, in Jackson County, is where the freak carbon dioxide gas wells of the Continental Oil Co. are located, and a government bulletin recently reported on a structure in Middle Park in Grand County. The South Park test was spotted by William T. O'Bryan and the Dakota is expected at around 1,864 feet. Another company, the South Park Oil & Gas Co., is getting ready to drill in the same general area on the Esche ranch, 8 miles east of Fairplay. The two companies, though having similar names, are not affiliated.

**Arapahoe County**

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, is drilling at 5,540 feet after being down several days to install a new cable. The 6¼-inch is at 4,484 feet. The bailer is bringing up shows of live oil, amounting to a little better than rainbows.

**Weld County**

Platte Valley Petroleum Co.'s No. 1 Patterson, SW SW Section 24-6n-61, Greasewood Dome, is drilling at 5,930 feet, believed to be in the Niobrara shale, the same having been topped at 5,760 feet. However, the identity of the horizon is not certain as reports on samples sent to Tulsa and Boulder for analysis have not yet been received. The gas showing continues to increase and now is in sufficient quantities to make its way through the water to the top of the 4¾-inch casing and burn when ignited when the tools are lifted 150 feet off bottom.

**Larimer County**

Continental Oil Co.'s No. 5 Scott, NE NW Section 6-9n-68, Wellington Dome, is bottomed at 4,315 feet and running tubing for a pumping test. Top of the Muddy was at 4,300 feet and the hole is showing some oil. The location is on the western flank of the structure.

**Morgan County**

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE Section 16-1n-57, Fort Morgan anticline, is drilling at 1,150 feet. The 15½-inch is at 955 feet. The Hygiene, if in place, is expected at around 1,800 feet.

**Adams County**

Nettie M. Slatt's No. 1 Hills, SE cor. Section 27-3s-65, is bottomed at 1,516 feet and preparing to run the 10-inch to shut off cavey ground. The 12½-inch was cemented at 1,300 feet.

**Lincoln County**

Kelly Oil Co.'s No. 1 State, SE NW Section 36-14-57, is shut down at 3,380 feet after drilling out cement which was run to shut off cavey ground. Oil and gas shows were encountered for the last 10 feet of drilling. The hole is not yet in the Dakota. This well commenced spudding in July, 1928, and has had several slight shows of oil and gas. It is reported negotiations are pending with another company to take over the operation.

**Washington County**

Middlemist Oil Co.'s No. 1 Middlemist, SW SE Section 14-4s-56, which has been idle at 1,030 feet for several months while some lease deals were being completed and some title adjustments made, is preparing to resume on June 1. The 15½-inch is on bottom, but has not been cemented.

**Jefferson County**

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor. Section 24-4s-69, which has been shut down at 3,568 feet since November, is resuming. It is cleaning out and underreaming to lower the 6⅝-inch pipe.

**Bent County**

Continental Oil Co.'s No. 1 Pipe Springs, NE cor. SE Section 27-27-49, is drilling at 6,020 feet in a conglomerate with 2,500 feet of water in the hole. The fact that this well found sandy lime beneath the granite at 5,958 feet is considered highly important as that formation has been identified as a granite wash. It is reported the company will drill another test in that area, though not officially confirmed. It is now believed probable the same company's No. 1 Wesa, SE NE Section 8-30-50, abandoned in 1928 at 2,085 feet, was not in true granite and that had it gone deeper it would have found the Pennsylvanian formation in place. The last named well was drilled 18 miles to the southwest of the Pipe Springs well.

**Huerfano County**

The Parker Club, Inc.'s No. 1 fee, Section 4-28-68, Badito-Alamo Dome, is bottomed at 4,115 feet in the top of the Lakota and running a string of drill pipe to remove some collapsed casing. This is to be made into a Pennsylvanian test.

**Fremont County**

Continental Oil Co.'s No. 4 San Isabel, NW SW Section 22-20-69, south extension of the Florence Pool, is drilling at 2,058 feet.

**La Plata County**

McGarr Petroleum Co.'s No. 1, SE NE Section 27-33-12, is drilling at 1,116 feet. A gas show was reported at 1,100 feet.

**Mesa County**

Argo Oil Co.'s No. 1 Hoel, NE cor. Section 23-8s-104, High Line, is bottomed at 3,000 feet and fishing for tools. It probably will begin sidetracking in a few days.

**Rio Blanco County**

White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is shut down at 4,002 feet, having reached contract depth. A representative of the Magnolia Petroleum Co., which controls White Eagle, is here to confer with local interests and it is probable the test will continue drilling. It is bottomed in brown shale of Tertiary age and has had several flows of gas in commercial volume. Texas Production Co.'s No. 1 Potter, NE SW Section 30-2n-96, White River, is bottomed at 5,984 feet and has been unable to recover the drill pipe. At this depth it had a considerable show of gas and a test of the production will be made.

**Moffat County**

Mountain Fuel Supply Co.'s No. 1 Lasher, NE NE Section 25-12n-101, Bartram Dome, was drilled to 2,746 feet and is plugging back to the gas sand at 2,180 feet. This sand made 3,000,000 feet of gas per day. This well is 1 mile to the southwest of Texas Production Co.'s No. 1 Berlin, the discovery well, in the SW NE Section 19-12n-100. The last named operation, which had an aggregate of 72,000,000 feet of gas in four horizons, is bottomed at 2,507 feet. It has lowered the 6¼-inch to 2,501 feet to shut off water and is resuming. Texas Production Co.'s No. 6 Knowlton, SE cor., Lot 8, Section 10-4n-91, Moffat Dome, a producer in the Dakota which is being deepened to the Sundance, is drilling at 4,370 feet in shale and shells. Midwest Refining Co.'s No. 24 Hannewalt, SE SE Section 4-6n-92, Bell Rock, is drilling at 2,707 feet in a wet hole. More water was encountered at 2,490-2,610 feet. Midwest's No. 19-SD Parkinson, SW NE Section 22-4n-92, Iles Dome, is drilling at 3,115 feet with a hole full of water.

**Jackson County**

Midwest Refining Co.'s No. 21-X Rich, SW NW Section 9-6n-80, Buffalo Creek, is drilling at 3,463 feet in gray shale and running the 8⅝-inch at 3,405 feet.

Producers & Refiners Corp.'s No. 1 Hendershot, SE NE Section 2-6n-81, Pole Mountain, is drilling at 3,759 feet in dark shale.

### WYOMING

The first deal in Salt Creek acreage reported for several years is the acquisition of 440 acres in the shale areas of the field by Western Producers, Inc., a new company organized by C. T. Andrews of Denver, and associates, with a capital of 75,000 shares of $1 par value. The company is financed principally in Chicago. The acreage acquired includes 280 acres in Section 28-40-79, on the west side of the field upon which are four producing wells, and 80 acres in Section 5-40-79, on the east side and within the withdrawal, upon which are three wells, from the Argo Oil Co., and 80 acres in Section 27-39-78, taken over from Salt Creek Consolidated under an operating agreement. The production is found in shale at 1,600-2,200 feet. The old wells will be cleaned out and three new wells will be drilled during the year. The officers and directors are: Christian Peterson, president; C. T. Andrews, vice president and general manager; Herman A. Clasen, second vice president; C. M. Holmen, treasurer; E. O. Engstrom, secretary; and Royal H. Jurgensen and William M. Ottermann, additional directors.

Mountain Fuel Supply Co., the production division of the Western Public Service Co., which supplies Utah cities with natural gas from Wyoming and Colorado, recently dedicated its new regional headquarters at Rock Springs, to be known as Wardell Court, a subdivision consisting of six acres. The camp includes blacksmith and machine shops, warehouse, garage, a two-story brick office building with seven bedrooms for single men and nine office rooms for officials and clerical force and six residence buildings for foremen and employes. A library, tennis court and other conveniences are included in the development. Mountain Fuel Supply Co. is reported to have mapped out a 10-year drilling program calling for 80 wells to augment the gas supply for the pipe line and marketing system. The company has delivered 1,400,000,000 feet of gas to the system since the opening of the line into Utah last year and has reserves of 200,000,000,000 feet of gas. The gas was taken from 19 wells in Baxter Basin and on the Hiawatha Domes. Several promising gas structures in addition to these are to be tested this summer.

**Salt Creek Deep Test**

Midwest Refining Co.'s No. 29-DT, NW, Section 35-40-79, the Salt Creek deep test, has reached the top of the Madison lime at around 3,400 feet and will run and cement the 6⅝-inch casing to shut off the water in the Amsden before drilling in. It will be about 10 days before the drilling is resumed. The 8⅝-inch casing was set at 4,313 feet.

**Park County**

Elk Basin Syndicate's No. 1 Johnson, NE SE, Section 6-57-99, 5 miles southeast of the producing area, is reported to have a good show of oil in the top of the Frontier at 2,412 feet. Casing will be run and cemented before drilling in. This test was started in July, 1927, by Mrs. Nettie Thompson, trustee, on a permit covering 2,542 acres. It is about a mile from the Local Oil Co.'s operation. In the Oregon Basin Field, there are only a few operations under way. Charles E. Orchard's No. 7 Rue, SW cor. NW, Section 28-51-100, was reported recently a completion in the Embar at 3,572-90 feet with an initial production of 108 bbls. This was an error as the well has not yet been drilled in, but is standing at 3,752 feet. Texas Production Co.'s No. 1 Freeman, C NW SE, Section 30-51-100, is drilling at 1,107 feet in black shale and Wyoming Western Oil Co.'s No. 3 Hough, SE cor., Section 18-51-100, is bottomed at 4,810 feet and fishing for underreamer lug. Lenco Petroleum Co.'s No. 2 Rousseau, SE NW, Section 33-51-100, is shut down at 3,619 feet, and the Oneida Oil Co.'s No. 1 Beck, SW cor., Section 28-52-100, is bottomed at 2,920 feet and trying to shut off water. On the Pitchfork structure, California Exploration Co.'s No. 2, NW NE, Section 14-48-102, is drilling at 2,365 feet with the 8¼-inch at 2,323 feet. On the Frannie Dome, Midwest Refining Co.'s No. 31 Frannie Oil, SW cor. NE, Section 25-58-98, is drilling at 1,755 feet in shale and shells and carrying the 10¾-inch at 1,729 feet, and its No. 31 Rosenberg, SW SE, Section 24-58-98, is fishing at 1,485 feet.

**Big Horn County**

Producers & Refiners Corp.'s No. 3 Government, NW NW, Section 24-56-98, joint with Kinney-Coastal Oil Co., is bottomed at 4,234 feet and resetting the 2½-inch tubing to fish for tools. Ohio Oil Co.'s No. 1 Union Gas, NE cor., Section 22-56-97, Byron Dome, is standing with the 6⅝-inch cemented at 5,286 feet on top of the Embar. The same company's No. 1 Easton, NW NW, Section 33-56-97, joint with the Utah Southern Oil Co., cemented the 10¾-inch at 3,080 feet in the red beds.

**Hot Springs County**

Midwest Refining Co.'s No. 8 Weeks, NW SE, Section 6-44-98, Wagonhound, cemented 12½-inch on bottom at 1,552 feet. Ohio Oil Co.'s No. 1 Smith, SE cor. NE, Section 9-46-99, Walker Dome, cemented 8⅝-inch on bottom at 4,403 feet to shut off water in the Dakota. This well had 3,000,000 feet of gas in the Frontier. Gebo Consolidated Oil Co.'s No. 1 SW cor., Section 23-44-95, Gebo Dome, is in the Frontier at 1,534 feet and reported to be showing some light oil through 100 feet of cavings. This well was shut down during the winter and during that period about 3,000 bbls. of oil was bailed from the hole, oil that had seeped in.

**Niobrara County**

Ohio Oil Co.'s No. 1 Converse Sheep, SW SE, Section 32-36-65, Lance Creek Field, an old producer in the Frontier which is being made into a deep test, is bottomed at 3,122 feet and pulling the 8¼-inch to lower the 10-inch to bottom. Argo Oil Co.'s No. 7 Weehopseso, SW NW, Section 19-39-60, Mule Creek, is preparing to resume after being shut down for the winter. It is bottomed at 2,690 feet in the Embar, which showed water.

**Natrona County**

Chicago Oil Co.'s No. 3, SW, Section 1-33-83, Poison Spider, is drilling at 1,700 feet. Midwest Refining Co.'s No. 11, NE NE, Section 23-35-79, Midway

Dome, has spudded and shut down. Wind River Oil & Gas Co.'s No. 1 DeLong, NE SE, Section 9-38-78, west of Teapot, is drilling at 2,512 feet, approximately 300 feet off the Frontier. It had 400 feet of oil from the shale in the hole when drilling was resumed after winter shutdown.

**Carbon County**

Producers & Refiners Corp.'s No. 2 Mahoney Dome, SCE NW, Section 34-26-88, is bottomed at 4,698 feet, at which depth it was shot after plugging back from 4,760 feet, and is cleaning out 5 feet off bottom. Same company's No. 8, NE NW, Section 7-26-89, Wertz Dome, a gasser in the Sundance, to be drilled to the Tensleep, has rig completed. Producers & Refiners' No. 1 O'Brien Springs, Section 11-24-88, is drilling at 1,270 feet. Midwest Refining Co.'s No. 31 Eades, SW SE, Section 1-18-78, Dutton Creek, is bottomed at 4,003 feet and cemented the 8⅝-inch at 4,000 feet.

**Fremont County**

Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, is drilling at 3,720 feet after going through shell and into sandy shale which is probably the beginning of the Lakota formation. The 6¼-inch is at 3,670 feet. Producers & Refiners' No. 10, Section 14-32-95, Sand Draw, is drilling at 1,950 feet in shale, and its No. 2, SE NW, Section 33-34-92, Muskrat Dome, is rigging up rotary. Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is shut down at 3,369 feet in the Frontier with a small show of gas. The 8⅝-inch is at 3,356 feet. It has drilled nearly 700 feet of Frontier so far.

**Sweetwater County**

Prairie Oil & Gas Co.'s No. 75-A, Section 11-26-90, Little Lost Soldier, cemented the 8¼-inch at 2,828 feet shutting off oil from either the base of the red beds or top of the Embar. It is headed for the Tensleep, which has never been tested on this dome. Mountain Fuel Supply Co.'s No. 1 Sullivan, SW SW, Section 10-16-104, South Baxter Basin, is drilling at 3,765 feet.

**Lincoln County**

Mountain Oil Corp.'s No. 1 State, NE cor., Section 36-25½-115, Wyoming structure, is drilling at 700 feet in a 20-inch hole in brown sandstone, a member of the Thaynes formation. The objective is the Park City formation which includes the Embar and Tensleep, and the Madison lime and the Deadwood. Midwest Refining Co.'s No. 1 Larcher, SE SE, Section 25-37-117, Little Grays River, is resuming at 1,731 feet after the winter shutdown.

**IDAHO**

Moneida Oil Co.'s No. 1 Rose, NE, Section 32-14-36, Clark County, has completed repairs and is resuming at 1,140 feet. Grand Teton Oil Co.'s No. 1 Blevin, SW SE, Section 33-5n-44, Teton County, is drilling at 2,460 feet in hard sand after lowering the 8¼-inch. Same company's No. 1 Bevan, NW SE, Section 28-5-44, is shut down at 1,700 feet to make a water shutoff.

**MONTANA**

An important strike was made the past week by the Stevenson wildcat drilling in the Bears Den structure on Section 18-36-6. When the bit reached a depth of 2,340 feet, a sand was found that held quite a showing of oil and with the Ellis sand just below this depth, a new well is expected and a new field opened in northern Montana. The showing is not considered commercial, but if the well does not find production in the Ellis, the showing will be shot to see what it will do.

The Bears Den Dome is about 10 mile south of the Canadian boundary, in Liberty County, several other domes are in that area and the Sunburst Oil & Refining Co. is drilling a wildcat on the Pinhorn Dome, about 3 miles north, while some Helena people are starting a well on the Beaupre Dome about 9 miles northeast of the Sunburst Field and on a line with the Bears Den Dome. The Stevenson well found a flow of gas in the Dakota sand that was estimated at 5,000,000 feet. This gas was cased off.

**Rocky Mountain Production**

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending May 17:

| | |
|---|---|
| **WYOMING** | |
| Salt Creek | 30,960 |
| Frannie | .... |
| Big Muddy | 2,070 |
| Oregon Basin | 4,720 |
| Dutton | 10 |
| Elk Basin | 840 |
| Ferris | 40 |
| Grass Creek | 2,110 |
| Hamilton | 660 |
| LaBarge | 1,870 |
| Lance Creek | 130 |
| Lost Soldier | 2,790 |
| Osage | 1,070 |
| Poison Spider | 960 |
| Rock River | 2,140 |
| Rex Lake | .... |
| Lander | 560 |
| Simpson Ridge | 50 |
| Teapot Dome | 40 |
| Greybull | .... |
| Mule Creek | 850 |
| Total | 51,870 |
| **MONTANA** | |
| Cat Creek | 1,300 |
| Kevin-Sunburst | 5,610 |
| Pondera | 2,320 |
| Lake Basin | 70 |
| Total | 9,300 |
| **COLORADO** | |
| Moffat | 877 |
| Fort Collins | 1,436 |
| Florence | 562 |
| Iles | 1,016 |
| Tow Creek | 359 |
| Boulder | 25 |
| Rangley | 50 |
| Total | 4,325 |
| **NEW MEXICO** | |
| Hogback | 440 |
| Rattlesnake | 434 |
| Table Mesa | 105 |
| Artesia | 598 |
| Cap Rock (Maljamar) | 992 |
| Jal | 1,476 |
| Hobbs High | 1,551 |
| Getty | .... |
| Lea | 6,269 |
| Miscellaneous (Lea County) | 427 |
| Total | 12,292 |
| Grand total | 77,787 |
| Grand total May 10 | 72,968 |
| Difference | 4,819 |

## WEST TEXAS FIELDS

(Continued from Page 81)

a minimum of 200 bbls. per day due to some of the pipe line companies curtailing their runs in that area. Again Ector County and Hobbs production was felt and was no doubt the main cause of some of the pipe line companies electing to take less oil from Howard and Glasscock Counties.

Some 20 odd companies active in West Texas are being canvassed by a committee representing the West Texas Geological Society to determine whether they will lend financial assistance in deepening P. H. Williams' No. 1 Ash, in Irion County, the world's deepest cable tool test, which is now shut down at 8,900 feet. The test was drilled solely by Mr. Williams without the help of any company, and it is hoped some companies will lend assistance in carrying the test down another 1,100 feet to gain further geological data on West Texas, even if commercial production is not gained. The test is in Section 20, Washington County School Lands.

**Howard Glasscock Proration**

For the remainder of the month the Howard-Glasscock Pools will be prorated to a minimum of 200 bbls. per day per well if the Railroad Commission passes on the recommendation of the advisory committee which met at the Blackstone Hotel, Fort Worth, on May 16 to discuss curtailing production to meet reduction of pipe line outlets. It is believed the Railroad Commission will pass favorably upon the recommendation.

To meet emergencies, E. E. Andrews, proration umpire of the field, reduced maximum production to 200 bbls. per day from all wells, on May 10, but the action brought much opposition from some operators, consequently the meeting was called Thursday to try to work out the most feasible plan for prorating the fields to meet the reduced demands of the pipe line companies.

Small wells which will not produce 200 bbls. daily are not affected, but wells capable of producing 200 bbls. will be cut. If a company has three or more wells on a lease, and one or two of them produce less than 200 bbls. and the remainder produce more than 200 bbls. each, the larger wells will not be allowed to make up for the deficiency of the small ones.

A committee composed of H. C. Hardison, California Co., Midland; F. M. Jacobson, Continental Oil Co., Fort Worth; and C. W. Tomlinson, Schermerhorn Oil Co., Ardmore, Okla., was appointed by M. B. Sweeney, chairman of the advisory committee, to arrange a permanent proration policy to fit reduced pipe line runs scheduled for the fields. The committee recommended that the wells be curtailed to 150 bbls. each per day after May 31, the recommendation going to Mr. Sweeney who will in turn forward it to the Railroad Commission at Austin for final decree.

**Penn Pool Factor**

The Penn Pool in Ector County is now making itself felt in the Howard-Glasscock area for before the former pool began producing an amount of crude which has to be reckoned with by the companies serving these two pools and the West Texas district, the latter pools were not disturbed, and proration ran along smoothly, but since the completion of many wells in the Penn Pool, and the gradual increase to around 14,000 bbls. per day, companies which have lines in both pools, and have production only in the Penn Pool, desired to cut pipe line runs from the Howard-Glasscock Pools to take more oil from the Penn Pool. Consequently the Penn Pool has become a disturbing element to the Howard-Glasscock County Pools.

The advisory committee of the Yates Field, Pecos County, met at Fort Worth May 17, to discuss proration of that field, and it was recommended the pool be kept at its present daily average of 110,000 bbls. instead of raising it to 130,000 bbls. per day as it was in March when an emergency order was issued to cut the pool 20,000 bbls. per day. This field has no doubt also felt the influx of the Penn Pool into the West Texas market. The present status will remain until June 1 when the present proration period expires. It cannot be said what changes may then be made.

**WEST TEXAS COMPLETIONS**

**Week Ending May 18**

**Ector County**

Humble Oil & Refining Co.'s No. 7-D Kloh & Rumsey, top pay 3,709 feet, total depth 3,780 feet; shot 180 quarts 3,710-80 feet; initial production 103 bbls. Landreth Production Co.'s No. 1 University, top pay 3,598 feet, total depth 3,720 feet; shot 120 quarts 3,589-3,650 feet; initial production 734 bbls.; first completed in February, 1930, for initial production 806 bbls.

**Glasscock County**

Simms Petroleum Co.'s No. 1 Coffer, top pay 2,146 feet, increase 2,278 feet, total depth 2,290 feet, initial production 421 bbls. oil and 63 bbls. water.

**Howard County**

Otis Chalk's No. 7 Chalk, top pay 2,950 feet, total depth 3,121 feet, initial production 90 bbls. Green Oil & Refining Co.'s No. 6 Clay, total depth 3,010 feet, plugged back to 2,540 feet, shot 60 quarts from 2,435-80 feet, second shot 15 quarts from 2,511-25 feet, initial production 20 bbls.

**Fisher County**

Cranfill & Reynolds' No. 1 Johnson, total depth 3,198 feet, plugged back to 3,187 feet, shot 100 quarts 3,162-80 feet, dry and abandoned.

**Pecos County**

Black and others' No. 2 Pecos Valley Oil Co., top pay 1,547 feet, total depth 1,580 feet, initial production 38 bbls. Moncrief & Savoy's No. 4 Smith, top pay 1,730 feet, total depth 1,830 feet, initial production 25 bbls. per hour. Phillips Petroleum Co.'s No. 1 Shearer was dry and abandoned at 1,678 feet. Rector Oil Co.'s No. 1 Young was dry and abandoned at 2,418 feet. Shell Petroleum Corp.'s No. 5-D Smith, top pay 1,754 feet, total depth 1,883 feet, initial production 60 bbls. per hour. Shell Petroleum Corp.'s No. 7-D Smith, top pay 1,720 feet, total depth 1,866 feet, initial production 27 bbls. per hour. Southern Crude Oil Purchasing Co.'s No. 1 Eaton, total depth 1,737 feet, plugged back to 1,644 feet, total depth 1,580 feet, initial production 18 bbls. Trees' No. 3 Trees was dry and abandoned at 2,321 feet. Transcontinental Oil Co. and Arkansas Fuel Oil Co.'s No. 1 Tippett was dry and abandoned at 1,803 feet.

**Crockett County**

California Oil Co.'s No. 2 Shannon, top pay 2,558 feet, total depth 2,576 feet, initial production 32 bbls.

**Loving County**

California Oil Co.'s No. 1 Allen, top pay 4,312 feet, total depth 4,315 feet, shot 160 quarts 4,273-4,314 feet, initial production 205 bbls.

**Upton County**

Shell Petroleum Corp.'s No. 1 Hughes was completed September 14, 1926, at total depth 2,165 feet for initial production 237 bbls., was shot April 23, 1930, flowed 435 bbls. in 12 hours after shot, 3 per cent water; was dead well before the shot. Shell Petroleum Corp.'s No. 10 Hughes completed February 19, 1927, for initial production of 75 bbls. at total depth 2,205 feet, shot on May 7, 1930, with 150 quarts, flowed 162 bbls. first 12 hours after shot, now shut in; before shot well was dead.

**Ward County**

Shipley's No. 4 Hayzlett had show of oil 2,532 feet, shot 60 quarts 2,940-70 feet, shot 35 quarts 2,640-57 feet, total depth 3,127 feet, dry and abandoned.

**Reeves County**

Southern Crude Oil Co.'s No. 1 Kloh Rumsey, dry and abandoned at 1,535 feet.

## PANHANDLE FIELDS

(Continued from Page 82)

18,000,000 feet of gas at 2,754 feet; initial production 3,800 bbls. May Petroleum Co.'s No. 5 Faulkner, sands 2,772-85 feet, and 2,825-50 feet, 22,000,000 feet of gas; initial production first 24 hours 2,115 bbls.; second 24 hours 2,610 bbls. Shamrock Oil & Gas Co.'s No. 3 Saunders, 10,000,000 feet of gas 2,458-65 feet; show oil and water 2,635-42 feet; show oil 2,764-66 feet; shot with 320 quarts from 2,540-2,766 feet; initial production 45 bbls. of oil and 45 bbls. of water. Phillips Petroleum Co.'s No. 2 Combs & Worley, top pay 2,830 feet, total depth 2,845 feet; initial production 55,000,000 feet of gas. Sun Oil Co.'s No. 1 Combs & Worley, total depth 2,855 feet; 22,000,000 feet of gas at 2,808 feet; initial production 2,500 bbls. Gulf Production Co.'s No. 2 Combs, top pay 2,817 feet; initial production 420 bbls.; total depth 2,845 feet.

**Hutchinson County**

Huey and others' No. 3 Smith and others, top of pay 2,740-50 feet; shot with 90 quarts from 2,735-70 feet; initial production 15 bbls.

**Wheeler County**

Murchison & Fain's No. 1 Parson, total depth 1,749 feet; initial production 48,000,000 feet of gas from 1,645-1,749 feet.

**WICHITA FALLS COMPLETIONS**

**Week Ending May 18**

**Archer County**

Arkansas Fuel Oil Co.'s No. 2 Witson, was dry and abandoned at 1,383 feet. Bridwell Oil Co.'s No. 2 Fails had an oil show at 1,348 feet, total depth 1,366 feet, initial production 100 bbls. Carter & Wright's No. 1 Wilson estate was dry and abandoned at 1,351 feet. Coombs & Rodgers' No. 1 Bounds was dry and abandoned at 1,135 feet. Golding & Cochran's No. 1 Kelly was dry and abandoned at 1,551 feet. M. & V. Oil Co.'s No. 6 Kunkel was dry and abandoned at 1,200 feet. Madden & Hunt's No. 1 Kunkel was dry and abandoned at 1,203 feet. Oil Investment Co.'s No. 1 Fails was dry and abandoned at 1,410 feet. Pandem Oil Corp.'s No. 11 Young had an oil show at 1,406 feet, total depth 1,411 feet, initial production 30 bbls.

**Clay County**

Marts and others' No. 1 Collie was dry and abandoned at 1,050 feet.

**Cooke County**

Sun Oil Co.'s No. 2 Milburn had an

oil show at 1,199 feet, total depth 1,202 feet, initial production 47 bbls. of oil, 50 per cent water.

**Montague County**

Carter and Rycade's No. 12 Cunningham and others had an oil show at 883 feet, total depth 900 feet, initial production 50 bbls.

**Wichita County**

Arkansas Fuel Oil Co.'s No. 32 Kemp & Kempner had an oil show at 1,187 feet, total depth 1,209 feet, initial production 4 bbls. of oil and 7 bbls. of water. Cooper's No. 1 Dary was dry and abandoned at 1,821 feet. Staniforth and others' No. 5 Crudup had an oil show at 1,809 feet, initial production 18 bbls. of oil and 2 bbls. of salt water, total depth 1,814 feet. United Production Co.'s No. 3-B Hodges had an oil show at 1,752 feet, total depth 1,770 feet, initial production 35 bbls.

**Wilbarger County**

Fain & McGaha Oil Corp.'s No. 26 Waggoner had an oil show at 2,284 feet and at 2,289 feet; total depth 2,315 feet, initial production 120 bbls. Gray Back Development Co.'s No. 1 Smith-Waggoner, top pay 2,405 feet; initial production 200 bbls.; total depth 2,424 feet. The Texas Company's No. 379 Waggoner was dry and abandoned at 1,125 feet. Waggoner Refining Co.'s No. 11 Waggoner, top pay 2,660 feet; total depth 2,668 feet; initial production 52 bbls.

**Young County**

Barron's No. 1 Howard was dry and abandoned at 965 feet. Bridwell Oil Co.'s No. 3 Dorinel had an oil show at 883 feet, initial production 7 bbls., total depth 915 feet. Bridwell & Stump's No. 1 Routon was dry and abandoned at 920 feet. Christie Brothers' No. 3 Kisinger had an oil show at 2,481 feet, initial production 125 bbls., total depth 2,525 feet. Fowler and others' No. 2 Hill was dry and abandoned at 1,038 feet. Hunter Oil Corp.'s No. 4 Benson had an oil show at 1,069 feet, initial production 110 bbls., total depth 1,084 feet. McDonald & Campbell's No. 1 Larimore was dry and abandoned at 722 feet. Perkins and others' No. 1 Danile had an oil show at 1,042 feet; initial production 230 bbls., total depth 1,078 feet. Perkins and others and Cullum's No. 9 Dunnagan had an oil show at 1,042 feet, initial production 225 bbls., total depth 1,078 feet. Perkins and others' No. 1 Sadan had an oil show at 1,034 feet, total depth 1,076 feet, initial production 140 bbls. Riner & Omohundro's No. 4 Keith had an oil show at 670 feet, total depth 674 feet, initial production 12 bbls. Wooten & Reed's No. 1 Haygood was dry and abandoned at 802 feet.

## PRODUCTION METHODS IN CALIFORNIA FIELD

(Continued from Page 54)

a whole would have rather low production costs per gallon, but the fact is that most of the small plants, where overhead is high in comparison to production, have to handle their gas in compressors, so that a fair average cost would seem to range from 3 to 3½ cents per gallon, while over the past year the approximate selling price has been about 7½ cents.

**Plant Residue Gas**

It is a well-known fact that considerable economic waste of surplus residue gas exists in nearly all flush pools. However, efforts are being made by producers and natural gasoline manufacturers to find markets for such excess residue, and thus eliminate such waste. It is also well known that marketing any marketable waste product is of financial interest to both the producer and gasoline manufacturer, and such market opportunities are not overlooked by the industry, but many times create tremendous investments.

**Plant Types**

Most of California's natural gasoline plants have been built in the last 10 years, with the absorption type in general favor; in fact, compression plants scarcely exist. The only one recalled now is a small one at Fillmore, making less than 2,000 gallons a day. Plant equipment is subject to constant experiment and improvements made. Many of the later plants are completely operated by centrifugal pumps, three and four on a shaft, and steam turbine driven, or else by motors, since all fields are electrified. This gives compactness and steady flow, though maybe not quite so flexible as reciprocating pumps. Much bad water is encountered, so that banks of short multiple-tube heat exchangers and preheaters are preferable, as well as bent-tube sections for cooling. One bad feature observed is that in the town lot areas some plants are dangerously crowded, due to the small space available for a layout.

Taking the State as a whole, the average production per plant per day is just about 16,500 gallons, with about 65 wells to each plant. However, in the heavy oil districts of Santa Maria and San Joaquin, the number of wells per plant is probably around 75, and in the Los Angeles basin the number is 48 or 50. The life of an oil well in California is a most uncertain thing, and at the best only a guess can be hazarded. Let us put those of the heavy oil districts at 15 years, for many are older than that now, and still going, while we place those of the light oil districts at five years. Certainly many of them that are well located will last a much longer time, but edge wells which are completions, but soon go to water, greatly shortening the average life.

**Fractionation and Treatment**

Just about all natural gasoline made in California is fractionated. Only a little bit that is disposed of under old and long-term sales contracts is not so treated, and it is impossible to sell any at present on contract that is not 90 per cent recovery or better. The trend is ever toward high recovery, as is evidenced by the State's newest field, Kettleman Hills, where all specifications are for 96, and where the raw product runs as high a specific gravity as 88. Rectifier column pressures run all the way from 150 to 250 pounds, with bottom temperatures from 225° to 280°, and from 90° to 135° at the top. No gasoline is being treated for doctor and corrosion, as so very little sour stuff is made, and this is disposed of by mixing it in with crude oil. California is peculiarly fortunate in that nearly all of its product is shipped by pipe line. Out of a total production of nearly 2,300,000 gallons a day, only 180,000 gallons is handled by truck and tank cars, and probably not more than 100,000 gallons is moved in crude lines. Of the latter, 70,000 gallons is blocked into crude lines from Kettleman without contamination, owing to the high gravity and light color of the crude. Union Oil Co. has just completed an 81-mile, 6-inch white line from Kettleman to tidewater at Avila, and has an ocean loading line.

The Natural Gasoline Manufacturers Association of California is working just now at two problems, the first of which is our old friend, a standard method for content test. The tentative recommendation at present is the charcoal 30°-32° but with some doubt expressed as to its final adoption, and with gas analysis looming up, provided it can be perfected.

The second problem is that of a fair price base. Sometime ago most outstanding contracts were changed so as to be based on Los Angeles posted tank wagon price, but during the recent price war that was raised 2 cents a gallon, to care for differentials, without any real change in the wholesale price, so once more our base became a fictitious one. The plan now under discussion is to post a flat price for isobutane free gasoline, but to accept a product up to 3 per cent isobutane with a penalty in price, and all settlements made on gas analysis run on each shipment.

And so it is hoped that it won't be long now until, when we speak to a second party of that said stuff, natural gasoline, said second party will know exactly what we are talking about.

## GASOLINE PLANTS IN OKLAHOMA CITY FIELD

(Continued from Page 46)

lease on which the gasoline plant is located have an estimated potential production of gas daily of close to 1,000,000,000 feet. The maximum capacity of the Sinclair gasoline plant is approximately 100,000,000 feet or only one-tenth of the capacity needed to handle these wells alone, if they were allowed to produce at a maximum. This condition exists in other sections of the field and further emphasizes the uncertainty of what may be expected as a matter of gasoline production in the future.

*Automatic pilot operator relief valves on the high pressure separators used by the Indian Territory Illuminating Oil Co. at its Verne plant in the Oklahoma City Field. The two closed pipe sections in series near the center of the picture serve as reservoirs as the pressure is reduced in three steps for the operation of the pilots.*

**Gas Lift Operations**

All of the companies operating gasoline plants have their own wells in the field and have considerable undeveloped acreage. Gas lift is not in general use now because there has been very little need of it. However, 14 wells are now on gas lift and more wells will be added as the natural pressure in the field declines. There are a number of compressors being installed in several of the gasoline plants at present and many more installations have been definitely planned.

At the Indian Territory Illuminating Oil Co.'s Bodine plant six 180 horsepower compressors are being added, four are being added at the Button plant, five at the Verne plant and two at the Coline Gasoline Co.'s plant. These and other plants will expand their compressor capacities as the needs demand.

On May 1, the Phillips Petroleum Co. and the Oklahoma Natural Gas Corp. announced the formation of the Philokla Gas Co. with equal interests in building and operating a compressing plant in the Oklahoma City Field. The company proposes to sell gas to operators for gas lift operations with the idea of centrallizing these activities and minimize the cost among those operators not having their own compressor plants. The plant will be located in NE SW, Section 1-11-3w and will handle 25,000,000 feet of gas when started. All of the gas will first be processed through a gasoline plant to be built by Phillips. The excess gas will be taken into the regular distributing mains of the Oklahoma Natural Gas Corp.

**New Gasoline Plants**

At the present time there are nine gasoline plants operating in the field and three are under construction. In addition, two booster plants are being erected by the Indian Territory Illuminating Oil Co. one of which is located on the Sudick lease in SW, Section 31-11-2w, and the other on the Trosper lease in SE, Section 11-11-3w. Each of these plants will have a capacity of 10,000,000 feet of gas but the gasoline production will be small. The production from each of these plants will probably not exceed 3,000 gallons per day. The first plant will be completed June 1 while the second plant is expected to be completed July 1.

Within a few days the Indian Territory Illuminating Oil Co. and the Cromwell-Franklin interests will begin to operate their new plant on the Farley lease in NW, Section 19-11-2w. This has a capacity of 50,000,000 feet of gas and will probably make from 15,000 to 20,000 gallons of gasoline when under full operation. A similar plant is being built by the same companies as joint owners on the Trosper lease in SE, Section 12-11-3w, but this plant is not expected to be completed much before July 15. The completion date on the new Phillips plant, already discussed has not been set but construction work has been started.

## COLUMBIA CONTRACTS FOR NEW GAS SUPPLY

(Continued from Page 84)

western fields to consumers in New York and New Jersey. It reopened the pipe about six years ago, and at that time rumors of prospecting were heard in the Dundee territory.

Owned in part by the Columbia Gas & Electric, the Belmont Quadrangle Drilling Co. was the first to strike gas on the Pulver farm 2 miles north of Altay in Schuyler County, New York. Shortly afterward another well, larger than the first, was opened 2,000 feet east of the other. The combined flow of the two is now about 6,500,000 feet a day. Three more wells, within 2,100 feet north, east and south, will be started immediately.

A branch pipe line from the two Schuyler wells and many others that may develop will be laid immediately at Dundee. During the summer, a large pipe carrying the combined flow will be run through Watkins, Montour Falls and Millport to connect with the Columbia Gas & Electric trunk line at Horseheads, near Elmira, that runs from Oklahoma to New Jersey.

This trunk line carries gas principally from the Ohio and Pennsylvania fields of the corporation. Among the larger cities wholly supplied by it is Binghamton. The pipe line ends in New Jersey near New York City.

The appearance of the Columbia corporation as the "backer" of the work in Schuyler County, and the adjacence of its main trunk line to that territory, assures unlimited resources for the development of the field. A veritable Eldorado has struck the gas pocketed area of New York State and residents there are becoming greatly excited over the prospects of having a "Texas in New York."

# PRODUCTION INCREASES IN VAN AS NEW BIG WELLS ARE ADDED

By L. E. Bredberg

FORT WORTH, Tex., May 19.—One more wildcat failure was registered in Van Zandt County in the past week when Cranfill & Reynolds' No. 1 Alexander, 150 feet from the south and west lines of a 42-acre tract in the J. Burleson Survey, 1 mile south of Grand Saline, was abandoned as dry at 3,490 feet.

Another test, which was formerly owned by Cranfill & Reynolds, located on a strip 110 feet by 1,100 feet, southeast of the Van producers, was completed for an initial production of 402 bbls. on a half-inch choke at a total depth of 2,703 feet. The Pure Oil Co. and other companies associated with the Pure in the Van block purchased the above mentioned strip from Cranfill & Reynolds, and are now operating it. This is the first well completed on the strip.

Pure Oil Co.'s No. 1 Murphree, almost half a mile northeast of the discovery well in the Van Pool, was completed for an initial production of 1,009 bbls. on a half-inch choke at a total depth of 2,901 feet.

Cranfill & Reynolds' No. 2 Coker, located 100 feet north of the abandoned deep test of the company, in the C. S. Coker 85.5-acre farm in the William Daniel Survey, approximately 2 miles northwest of the discovery well in the pool, is now drilling below 585 feet in shale and should reach the shallow pay horizon around 1,400 feet which was found in the former test, within another week unless hard luck holds it back. The former test encountered a good showing of oil in sand around 1,400 feet which prompted the owners to drill this shallow test in an effort to bring in a producer from the sand found at this depth, and above the Woodbine sand, from which the Van Pool wells are producing.

The Gulf Production Co. and Humble Oil & Refining Co. have made a location on the Humble's lease on the Mrs. E. E. Correll 95-acre farm in the William Daniel Survey, approximately 2,000 feet southeast of the above named test of Cranfill & Reynolds. This test will no doubt pick up the shallow pay horizon also, but will probably be drilled on down to test the Woodbine sand, adding another test in the northeastern part of the area under development.

Shell Petroleum Corp.'s No. 1 Stephens on its La Rue block, east of Athens in Henderson County, is now drilling ahead after having completed its fishing job which held it back for some time. It is now drilling below 3,700 feet with no more showings of oil to stimulate interest, which has practically been lost in this formerly extremely interesting test. It topped the Georgetown at 3,600 feet and is now drilling in that formation.

Humble Oil & Refining Co.'s test on the Collier farm on its Brushy Creek block in Anderson County topped the chalk at 3,110 feet this week and is now drilling at 3,148 feet. This area is the most interesting in Anderson County.

Sutton and others' No. 1 Hammond, located on the W. D. Hammond tract in the James Reed Survey, Smith County, which has been shut down at 3,600 feet, is now preparing to deepen.

The Deep Rock Oil Co. has made a location for its No. 1 First National Bank, 660 feet south and 660 feet west of the northeast corner of the west 80 acres of the Henry Culp Survey, Titus County. This was the only location reported for East Central Texas this week, outside of Van Zandt County, thereby apparently showing up a slackening of activities in that area, although heavy rains may have been the cause of this week's shortage in new activities, and next week may make up for the shrinkage.

## COMPLETIONS OF WELLS IN EAST CENTRAL TEXAS

### Van Zandt County

Pure Oil Co. and Cranfill & Reynolds' No. 1 A. D. Clark, top Austin chalk 2,450 feet, initial production 402 bbls. on one-half inch choke, total depth 2,703 feet. Cranfill & Reynolds' No. 1 C. M. Alexander, Pecan Gap, 2,690-2,812 feet, total depth 3,490 feet; dry and abandoned. Pure Oil Co.'s No. 2 E. L. Fowler (Shell's lease), initial production 900 bbls. on one-half inch choke, total depth 2,907 feet. Same company's No. 3 Jarman, initial production 900 bbls., total depth 2,900 feet. Same company's No. 1 Murphie, initial production 1,009 bbls. on one-half inch choke, total depth 2,901 feet.

**EAST CENTRAL TEXAS**

| | |
|---|---|
| Boggy Creek | 3,630 |
| Cedar Creek | 45 |
| Currie | 358 |
| Hill County | ..... |
| Mexia | 4,302 |
| Minerva | 585 |
| Nigger Creek | 210 |
| Powell | 5,840 |
| Richland | 240 |
| Thrall | 42 |
| Van | 24,326 |
| Wortham | 845 |
| Total East Central Texas | 40,424 |
| Week ending May 10 | 39,000 |
| Increase | 1,424 |

## EAST CENTRAL TEXAS WILDCATS

Week Ended May 17

**ANDERSON COUNTY**

Navarro, Sun and Humble's No. 1 Gardner, 1,150 ft. from N and 150 ft. from E of 147.5-acre tract in M. M. Salinar Sur. ..... Drlg. 507 ft.

Sun Oil Co.'s No. 2 Bowers & Maier, 150 ft. from S and 140 ft. N of SW, 1,450 ft. SW of SE lines of tract ..... Rigging up.

**FREESTONE COUNTY**

Killam & Phillips' No. 1 Killam, 150 ft. from N and 1,310 ft. E of 272½-ac. tract, A. Sanchez Sur. ..... Drlg. 2,315 ft.

**HENDERSON COUNTY**

H. B. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-acre tract in A. York Sur. ..... Drlg. 2,000 ft.

Chapman's No. 1 Cade, 1,662 ft. from N and 3,294 ft. from W of J. B. Dorsey Sur. ..... S. D. 3,100 ft.

Cranfill & Germany's No. 1 Stow, 2,582 ft. E, 785 ft. S. Guadalupe Acosta Sur. ..... Location.

George Pace et al's No. 1 Mrs. Sarah Anthony, 273 ft. N and 132 ft. W of SE cor. of S. Anthony 632-ac. tract, Jose W. Battvan Sur. ..... Derrick.

Shell's No. 1 Stephens, 760 ft. from S, 830 ft. from E lines I. D. Owens Sur., S. T. Stephens 118-ac. tract ..... T. D. 3,701 ft.; coring lime.

**HUNT COUNTY**

Branson et al's No. 1 West, 350 ft N, 350 ft. W of W 60-ac. tract, Jas. Rooces Sur. ..... Derrick.

**KAUFMAN COUNTY**

Sowell et al's No. 1 Ables, 1,200 ft. from SE, 1,000 ft. from SW of Ables' 233-acre tract, Elizabeth Ables Sur. ..... T. D. 428 ft.

**RAINS COUNTY**

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-acre tract in John Christian Sur., 6 miles SE of Emory ..... Rebuilding derrick.

Owens & Sloan's No. 1 Hill, 150 ft. out of NW cor. of 150-ac. tract, T. McMahon Sur. ..... Drlg. 1,805 ft.

**RUSK COUNTY**

Mass et al's No. 1 Mathews, 2,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Derrick.

Canfill & Reynolds' No. 2 Dr. C. S. Coker, 100 ft NE of No. 1, Wm. Daniel Sur. ..... Machine.

**SMITH COUNTY**

Adair & Daniels' No. 1 Porter, 200 ft. S of S line of Wm. H. Malone Sur. and C of W half of S line of survey in David Wilson Sur. ..... T. D. 2,885 ft.; top Pecan Gap 2,857 ft.

Owen Sloan Oil Co.'s No. 1 Starnes, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur. and 80 ft. E at right angles to W line of J. Waller Sur. ..... S. D. 1,322 ft.

Sutton et al's No. 1 W. D. Hammond, 150 ft. out of SW cor. W. D. Hammond tract in Jas. Reed Sur. ..... S. D. 3,600 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Lagrone Sur., 4 miles SE of Winona ..... Derrick.

**VAN ZANDT COUNTY**

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Chapman et al's No. 1 Clarke, 150 ft. from N and W of 76-ac. tract, John Walling Sur. ..... Derrick.

Craft & Kelsey's No. 1 Euas, John Prade Sur., 150 ft. from E and 71 ft. at right angles to intersection of Sam Allen tract, north farm. ..... Rigging up.

Cranfill & Reynolds' No. 1 Alexander, 150 ft. from S and W of 42-ac. tract, J. Burleson Sur., 1 mile S of Grand Saline ..... Base Pecan Gas 2,690-2,812 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-acre tract John Wright Sur. ..... Drlg. shale 2,200 ft.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-acre tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler. ..... S. D. 2,796 ft.

Grand Saline Oil Co.'s No. 1 Carns, 200 ft. from S and W of most westerly SW cor. of 588-acre tract in S.P.R.R. Sur., Abstract 887, 4½ miles N of Grand Saline ..... S. D. 1,160 ft.; derrick under water.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox in A. C. Night Sur. 1,785 ft. N of S line and 524 ft. E of W line ..... Derrick.

Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick blew down.

Imperator Oil Co.'s No. 1 Canter, 150 ft. from N and W of Carter 171-ac. tract, W. M. Daniels Sur., NE of Van Pool ..... S. D. 158 ft.

Pandem Oil Co.'s No. 1 Brinn & Gibbard in Ramon Sunigas Sur., NE of Grand Saline ..... Pecan Gap 2,850-2,975 ft.; S. D. 3,045 ft.

Priest et al's No. 1 Blewett, 175 ft. NW and SW of SE cor. of NW 84-ac. tract, E. Porter Sur. ..... Derrick.

Short et al's No. 1 B. C. Andrews, 330 ft. N and 160 ft. E of NE cor. of J. P. Farley 60-acre tract in Margaret Neil Sur. ..... S. D. 3,005 ft.

Texas Chief Oil Co.'s No. 1 Foster, 600 ft. E of W line and 600 ft. N of S line of W. P. Foster's 151-acre tract in F. Montgomery Sur., 7 miles south of Canton. ..... Spudded and shut down.

Pure-Humble's No. 1 L. V. Freeman, 250 ft. from E and 712 ft. from N line of 31.5-acre tract in John Walling Sur., one-half mile E of discovery. ..... Plugged back; trying to produce.

Van Zandt Oil & Dev. Co.'s No. 1 Robinson, located NE cor. of Y'Barbo Sur., 4 miles E of Grand Saline. .... Drlg. 4,100 ft.; top Pecan Gap 2,764 ft.; base Pecan Gap 2,881 ft.

Pure Oil Co.'s No. 1 Leanard, 777 ft. from S and 200 ft. from W of 47.5-ac. tract ..... Derrick.

Judge A. W. Walker's No. 1 S. H. Keahey, 1,200 ft. N and 132 ft. E of SW cor. of Sur., A. J. Horsley Sur., R. J. Peel farm ..... Derrick.

**WOOD COUNTY**

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 109-acre tract in Wm. Barnhill Sur. ..... Drlg. 2,900 ft.

Pace et al's No. 1 Dickey, 1,200 ft. from E and 300 ft. from S of Dickey 120-ac. tract, J. O. Clark Sur. .... Drlg. 2,785 ft.

# Texas-Chicago Lines Are to Be Laid By Cities Service Co.

By B. E. V. Luty

PITTSBURGH, Pa., May 19.—Financial arrangements are understood to have been completed whereby the various parties interested in laying a natural gas line from Texas to Chicago have combined to proceed with the work. The line itself will be laid by Cities Service Co., or rather the parallel lines, as one 24-inch line will be laid this year and another next year, on the same right of way. Half the first line, about 450 miles, is understood to have been ordered from National Tube Co., the other half to go to the A. O. Smith Corp.

National Tube Co. has been making 24-inch seamless at the new mill at Gary, as already reported, and is understood to be about ready to make electrically welded at the new plant at McKeesport, near Pittsburgh. Before the order just mentioned had been booked National Tube Co. had taken more than a thousand miles of 22 and 24-inch line pipe and to furnish deliveries probably necessary the entire mileage could hardly come from the one seamless tube mill, so it is inferred that a considerable portion of the total will be made at the new electrical welding plant. National is also building seamless tube mills at Lorain and McKeesport to make up to 24-inch, but they are unlikely to be completed for several months.

Pipe mills may be estimated as averaging an operation of 60 per cent or a little more, referring only to regular fire welded butt and lap weld pipe, not electrically welded or seamless. The heavy end of the production is in standard or merchant pipe. The old tube mills, making up to 13-inch or thereabouts, may be set at 60 per cent as a liberal estimate. They have a very fair business in mechanical tubing.

Demand for standard pipe has been increasing for a couple months past, but at a very slow rate, and is now well under its usual volume at this time of year.

Taking steel as a whole, it has been losing just a little ground in the past three weeks in point of tonnage, this being presumably the usual seasonal decline, but not as marked as in most other years, for often demand has tapered off so as to make July production far below the spring peak rate. Now it loks as if production would be fairly well sustained, and the rate has not been at all bad, merely under the past couple of years, which were exceptionally active.

The Steel Corp.'s unfilled tonnage report was in line with precedent and general conditions combined. The fact that there was 216,433 tons decrease during April in unfilled obligations, following seven months of increases, was not particularly unfavorable, for the time of year must be considered. In April of last year there was a small increase, but in April of each of the four preceding years there was a decrease, some of the decreases being much larger than that just reported.

Steel prices continue to give a poor account of themselves. Recently bars, shapes and plates were all quotable at 1.80 cents, Pittsburgh. Bars may still be quotable at that figure, subject to some shading, but plates and shapes may now be called 1.70 cents to 1.80 cents. Nuts, bolts and rivets have all been reduced, following shading. The general discount is now 73 per cent instead of 70 per cent, making 10 per cent reduction in the net price. On large rivets the market is now 2.90 cents against 3.10 cents, or $4 a ton decline. Wire and wire prod-

ucts are now steady, since the formal reduction of the leading interest to prices which were being made as cut prices. Making up a weighted average of steel prices there is over $3 a ton decline since January 1 and between $4 and $5 from last year's top, the present market being the lowest since 1922. There was a low point late in 1927 but it was about $2 a ton above the low level now reached.

## PLAN TO PIPE NATURAL GAS TO PHILADELPHIA

(Continued from Page 84)

land, on Lake Erie, to Kentucky and West Virginia.

United Gas Improvement controls the Philadelphia Electric Co. and operates the Philadelphia Gas Works Co., owning other large utility properties in Pennsylvania, Delaware, Connecticut and many other states. Together with United Corp., it owns working control of the Public Service Corp. of New Jersey.

The furnishing of natural gas to the Pennsylvania and New Jersey properties controlled by or affiliated with United Gas Improvement is viewed in utility circles as a measure permitting great economies in fuel consumption in the manufacture of coke oven or water gas, and in additional plant facilities which would be required from year to year if no natural gas were available.

The Columbia system is also extending its pipe lines south of the Potomac River, toward Richmond and Norfolk Va., Baltimore, Md., Washington, D. C., and other important cities near the Eastern Seaboard. Columbia owns gas rights in 5,902,034 acres of producing lands in the East, of which only 806,381 acres, or about 14 per cent, are being operated. Last year its gas sales were 144,600,000,000 feet and its gross earnings were $115,150,000.

## MAY CURTAIL OUTPUT OF BRADFORD-ALLEGANY

BRADFORD, Pa., May 17.—At a meeting of representative oil producers in the Bradford Field held Thursday it was recommended that the meeting go on record as favoring a shutdown of all pumping wells and all water pressure plants for 36 hours each week from Saturday, May 17 to Friday, June 6, in order to stabilize production with pipe line and refinery demand.

On Friday a meeting of operators in the Allegany Field was held in Wellsville, N. Y., and while no definite action was taken in the matter of curtailing production a committee was appointed to study the situation and to report with a recommendation on Wednesday, May 21.

It was brought out at the two meetings that the production of Pennsylvania Grade crude oil is approximately 80,000 bbls. per day but that refinery requirements call for only 62,000 bbls. per day. This leaves about 18,000 bbls. a day that is being run to storage of which the South Penn Oil Co. alone is said to be storing 8,000 bbls. The overproduction is altogether in the Bradford and Allegany Fields.

It is hoped by those interested in a better price for crude oil that both fields will be shut down each week on Sunday and a part of either Saturday or Monday. This would result in reducing the production of the two pools by over 21 per cent or about 8,600 bbls. and would cut the total production of Pennsylvania Grade oil to about 71,400 bbls. Even this quantity is more than the refinery demand.

## WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 81)

**CRANE COUNTY**

Cranfill et al's No. 1 Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land .... Top salt 505 ft.; fishing 2,420 ft.
C. C. Duffey's No. 1 Cowden Bros., 1,280 ft. from W and 660 ft. from S of Sec. 31, Blk. 2, H.&T.C. Sur.... Drlg. 180 ft.
Duffey et al's No. 3 Cowden Bros. et al, 2,232 ft. from W line and 200 ft. from S line, Sec. 18, Blk. X ..... Shut down 2,000 ft.

**CROCKETT COUNTY**

Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. ..... Machine.
Lewis & Daniels' No. 1 Pecos River bed, 19 yds. S and 37° E of NW cor., Sec. 33, Blk. 1, I.&G.N. Sur. ..... Shut down 1,407 ft.
Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, Blk. 1, G.C.&S.F.R.R. Sur... Top salt 660 ft.; show gas 1,858-1,950 ft.; 1 gal. oil per hr. from 2,205-10 ft.; drlg. 3,500 ft.
G. Schaul's No. 1 Bouscour Est., 330 ft. N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur. ..... Location.
Trans-Texas Oil Co.'s No. 2 Shannon, 983 ft. from S and 1,878 ft. from E line of Sec. 42, T.C.R.R. Sur.... Top salt 1,235 ft.; drlg. 2,522 ft.

**CULBERSON COUNTY**

Grisham & Hunter Corp.'s No. 1 Garren, 2,310 ft. from S and 330 ft. from E of Sec. 18, Blk. 89, P.S.L. Sur. ... Shut down 2,500 ft.
Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W, Sec. 20, Blk. 82 ..... Small show oil 1,331 ft.; shut down 2,907 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W. Sec. 15, Blk. 79, Public School Land ..... Drlg. at 250 ft. after setting 15½-in. casing at 40 ft.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW, Sec. 14, Blk. 81 ..... Slight show oil 740 ft.; shut down 875 ft.; may abandon.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E, Sec. 1, Blk. 97, Public School Land ..... Oil show 2,528 ft.; shut down 3,508 ft.

**ECTOR COUNTY**

Amerada and Skelly's No. 1-B University, 990 ft. from S and 440 ft. from E line, Sec. 2, Blk. 35, University Land ..... Drlg. 1,075 ft.
Cosden Oil Co.'s No. 2 University-B, 2,310 ft. S and 440 ft. W of NE cor. of Sec. 2, Blk. 35, University Land ..... Drlg. 3,175 ft.
C. P. Davis et al's No. 1 Hendricks, C SW, Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 2,920 ft.
Gibson & Johnson's No. 1 Scharbauer, 990 ft. from N and E of Sec. 4, Blk. B-15, Public School Land ..... Shut down 4,012 ft.
Gulf Prod. Co.'s No. 1 Kloh-G, 330 ft. N and 440 ft. E of SW cor., Sec. 5, Blk. 44, Twp. 3s, T.&P. Sur. ..... Top pay 3,715 ft.; shut down 3,760 ft.; swabbed 240 bbls. in 24 hrs.
Gulf Prod. Co.'s No. 2 State, 330 ft. S and 440 ft. W of NE cor. S 160 acres, Sec. 1, Blk. 35, University Land.. Top brown lime 3,120 ft.; drlg. 3,400 ft.
Gulf Prod. Co.'s No. 2 State-A, 330 ft. N and 440 ft. W of SE cor. N half S half, Sec. 2, Blk. 35, University.. Drlg. 3,350 ft.
Humble Oil & Ref. Co.'s No. 8 Kloh-D, 986 ft. N and 440 ft. E of SW cor., Sec. 7, Twp. 3s, Blk. 44, T.&P. Sur. ..... Drlg. 2,950 ft.
Humble Oil & Ref. Co.'s No. 7 York, 1,650 ft. N and 440 ft. E of SW cor., Sec. 16, Blk. 44, Twp. 3s ..... Drlg. 2,930 ft.
Independent Oil & Gas Co.'s No. 1 Eidson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ..... Shut down 3,800 ft.; shot 240 qts. from 3,690-3,755 ft.; filled up 1,300 ft. with oil 18 hrs. after shot.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. ..... Spudded and shut down 30 ft.
T. P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 282, Blk. 45, Twp. 2s, T.&P. Sur. ..... Fishing 3,840 ft.
Transcontinental Oil Co.'s No. 1 University, 1,650 ft. from N and 440 ft. from E line of Sec. 3, Blk. 35, University Land ..... Drlg. 2,350 ft.
R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor., Sec. 27, Blk. 44, T.&P.R.R. Sur.. Building derrick.
Skelly Oil Co.'s No. 2-A University, 330 ft. S and 440 ft. W of NE cor., Sec. 1, Blk. 35, University Land ... Fishing 3,500 ft.
Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ..... Shut down 970 ft.
Sunray Oil Co. et al's No. 1 Jones, 2,330 ft. from N and 440 ft. from E of Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur... Drlg. 710 ft.
The Texas Company's No. 7 Connell, 2,310 ft. from S and 440 ft. from W, Sec. 1, Blk. B-16, Public School Land ..... Drlg. 3,248 ft.

**EL PASO COUNTY**

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. ..... Shut down 1,722 ft.

**FISHER COUNTY**

Cranfill & Reynolds' No. 2 Willingham, 330 ft. from N and E of NW, Sec. 199, B.B.B.&C.R.R. Sur. ..... Drlg. 2,795 ft.
Cranfill & Reynolds' No. 2 Barrett, 330 ft. from N and W of NE, Sec. 199, B.B.B.&C. Sur. ..... Rig on ground.
Cranfill & Reynolds' No. 2 Flannigan, 320 ft. from S and E of W half of Sec. 200, B.B.B.&C.R.R. Sur. ..... Rig on ground.
Mid-West's No. 1 Decker, 330 ft. from S and W of W 80 ac. of N 160, Sec. 8, Richardson Sur. ..... Location.
Roeser & Pendleton's No. 1 Steele, 660 ft. from N and 440 ft. from W of N half of SW, Sec. 210, B.B.B.&C. Sur. ..... Rigging up.
The Texas Company's No. 1-A Teagarden, 150 ft. from S and 420 ft. from E of Sec. 8, Richardson Sur. ..... Location.

**GAINES COUNTY**

Humble Oil & Ref. Co.'s No. 1 Carswell, 660 ft. S and E of NW cor. of Sec. 23, Blk. A-27, Public School Land. Drlg. 1,190 ft.

**GARZA COUNTY**

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&G.N. Sur. ..... Location.

**GLASSCOCK COUNTY**

California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.&P. Sur. ..... Shut down 2,055 ft.
Kirby Pet. Co. et al's No. 2 Phillips, 990 ft. S and 2,310 ft. E of NW cor., Sec. 23, Blk. 33, Twp. 2s, T.&P. R.R. Sur. ..... Drlg. 2,030 ft.
Kirby Pet. Co. et al's No. 3 Phillips, 1,650 ft. S and 2,310 ft. E of NW cor., Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,125 ft.
Shell Pet. Corp.'s No. 1 Phillips, 1,650 ft. S and 2,310 ft. W of NE cor., Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Show oil 1,374-1,414 ft.; top pay 2,160 ft.; increase 2,233 and 2,332 ft.; total depth 2,340 ft.
Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.P. Sur.... Show oil 970 ft.; shut down 2,991 ft.
World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur.... Location.
World Oil Co.'s No. 1 Edwards, 330 ft. from S line and 2,310 ft. from W line of Sec. 13, Blk. 84, Twp. 2s, T.&P. Sur. ..... Drlg. 750 ft.

**HOWARD COUNTY**

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ..... Sulphur water 1,433-46 ft.; shut down 1,456 ft.
McGinley-Sigler's No. 1 Hyman-C, 330 ft. N and 990 ft. W SE cor., Sec. 93, Blk. 29, W.&N.W.R.R. Sur. ..... Location.
Merriwether's No. 1 Smith, 150 ft. from S. 2,490 ft. from W, Sec. 45, Blk. 33 ..... Shut down 2,540 ft.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.
Sinclair O. & G. Co.'s No. 1 Montgomery et al, 2,310 ft. from N and W of Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,740 ft.

**HUDSPETH COUNTY**

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ..... Slight oil show 4,021-23 ft.; drlg. 4,562 ft.
Western States Oil Co.'s No. 1 Moore, C SE, Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Shut down 2,760 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ..... Fishing 3,155 ft.

**IRION COUNTY**

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ..... Shut down 1,105 ft.
Cromwells' No. 2 Nutt, 504 ft. from N and 1,162 ft. from W of Subd. 6, Gonzales County School Land.... Top pay 1,435 ft.; total depth 1,451 ft.; swabbed and flowed 85 bbls. in 3 hrs.
Fox et al's No. 3 Tankersley, 1,520 ft. from S and 450 ft. from E of Sec. 712, F. Willig Sur. ..... Show oil 1,318 ft.; total depth 1,335 ft.
Glenn et al's No. 1 Tankersley, NW cor. SW, Sec. 4, G.C.&S.F.R.R. Sur. ..... Location.
Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE, Sec. 19, Blk. 7, H.&T.C. Sur. ..... Show gas 7,656 ft.; encountered 2,400 ft. sulphur water 7,818 ft., plugged back to 6,700 ft.; cleaning out; swabs 3 bbls. oil daily.
P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ..... Show oil 7,931 ft.; shut down 3,890 ft.; may drill deeper.
Straughan and Texannati Oil Co.'s No. 1 Nutt, 150 ft. N and E of NW NW, Blk. 6, Gonzales County School Land ..... Drlg. 650 ft.

**JONES COUNTY**

Mid-Tex Oil Co.'s No. 1 King, 330 ft. E of river and 800 ft. S of N line, Subd. 1, Sec. 197, M. Bueno Sur... Topped sand 1,980 ft.; putting on pump.
Shabeen et al's No. 1 King ..... 800 ft. fluid in hole; shut down 2,204 ft.; top pay 2,061 ft.; cleaning out after shot.

**KENT COUNTY**

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H. H.&T.B. Sur.. Shut down 273 ft.

**LAMB COUNTY**

Graham Oil & Gas Co.'s No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Shut down 4,428 ft.

**LOVING COUNTY**

California Co.'s No. 1 Reagan & McElvain, 330 ft. SW of NE line and 330 ft. SE of NW line, Sec. 84, Blk. 1, W.&N.W.R.R. Sur. ..... Shut down 4,113 ft.
Dixie and Phillips Pet.'s No. 1 Johnson, 1,320 ft. from N and E of Sec. 38, Blk. 54, Twp. 2s, T.&P. Sur. .... Drlg. 800 ft.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 3,383 ft.
Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ..... Rigging up and shut down.
Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.
Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur... Location.
Lockhart's No. 1 Wheat & Ramsey, 440 ft. from NE and NW of Sec. 83, Blk. 1, W.&N.W. Sur. ..... Shut down 4,065 ft.
Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. .... Rigging up.
Rush et al's No. 1 Wheat, 1,650 ft. from NW and 330 ft. from SW of Sec. 85, Blk. 1, W.&N.W. Sur. ..... Location.

**LYNN COUNTY**

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. Sur. — Shut down 190 ft. for casing.

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. — Top salt 2,140 ft.; oil show 1,580-90-ft.; hole full sulphur water 4,730 ft.; shut down 5,040 ft.

**MENARD COUNTY**

Panhandle Ref. Co. et al's No. 2 Eckhart, 1,320 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. — Location.

Priest's No. 1 Sorel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. — Drlg. 1,935 ft.

**MIDLAND COUNTY**

Pure Oil Co.'s No. 1 Hutt, 2,310 ft. from N and 330 ft. from E of Sec. 14, Blk. 38, Twp. 4s, T.&P. Sur. — Drlg. 1,160 ft.

**MITCHELL COUNTY**

Gant & Teas' No. 1 Handley, 330 ft. S and W parallel to section lines of NE cor. of SE, Sec. 12, Blk. 28, Twp. 1n, T.&P. Sur. — Rigging up.

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. — Total depth 3,112 ft.; top pay 3,038 ft.; 1,000 ft. oil in hole; swabbing 40 bbls. in 24 hrs.

**PECOS COUNTY**

Atlantic O. P. Co.'s No. 1 Shearer, 330 ft. from NW and SW, Sec. 107, Blk. 10, H.Y.N.R.R. Sur. — Show oil and gas 1,052 ft.; and 1,170 ft.; top pay 1,438 ft.; plugged back 1,450 ft.; putting on pump.

California Co.'s No. 1 Jasper Co. Realty Co., 165 ft. from NE line and 159 ft. from SE line of California Co.'s 160 acres, Sec. 21, Blk. 10, H.&G.N.R.R. Sur. — Show oil 1,340 ft.; shut down 1,558 ft.; estimated 15,000,000 ft. gas.

Crosby Prod. & Ref. Co.'s No. 1 Cordova, 330 ft. from N and E of S 320 ac., Sec. 11, H.&G.N. Sur. — Top salt 725 ft.; shut down 2,030 ft.

Cromwell et al's No. 1 University, 1,980 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 16 — Shut down 1,985 ft.

Fisher & Lowrie's No. 1 Webb, C, Sec. 3, Blk. 203, Tillman & Walters Sur. — Drlg. 1,498 ft.

Hayes et al's No. 1 Lea, C NW of NE, Sec. 9, Blk. 106, T.&S.L. Sur. — Location.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. — Drlg. 202 ft.

Hussman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E, Sec. 83, Blk. OW, T.M.R.R. Sur. — Fishing 1,680 ft.

Independent Oil & Gas Co.'s No. 1 Jasper County School Land, 1,160 ft. from SE line, 160 ft. from NE line, Sec. 21, Blk. 10, H.&G.N.R.R. Sur. — Shut down 1,585 ft.; 25,000,000 ft. gas at 1,555 ft.; spraying 8 bbls. per day.

Martin A. Meyer et al's (formerly Mauch & Kroger) No. 1 Holmes, S half SW, Sec. 5, Blk. 178, T.C. Sur. — Shut down 2,234 ft.

Messenger et al's No. 1 Byrne, 2,130 ft. from NW line, 1,830 ft. from SW line, Sec. 54, Blk. 10, H.&G.N.R.R. Sur. — Drlg. 1,300 ft.; show oil 1,298 ft.

Messenger et al's No. 2 Byrne, 2,490 ft. from NE and SE of Sec. 54, Blk. 10, H.&G.N. Sur. — Location.

J. R. Miller et al's No. 1 Bennett, 359 ft. W from CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. — Spudded and shut down.

J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.&C.S.F. Sur. — Top pay 1,089 ft.; 700 ft. fluid in hole; fishing 1,160 ft.

J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. — Show oil 1,785 ft.; shut down 2,200 ft.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. — Location.

Penn Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. — Shut down 920 ft.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. — Spudded and shut down.

Phillips Pet. Corp.'s No. 3 Monroe, 2,860 ft. from N and 660 ft. from E, Sec. 29, Blk. 194, G.C.&S.F. — Cellar.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. — Location.

Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. — Drlg. 1,860 ft.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&S.T.L. Sur. — Drlg. 2,635 ft.

Transcontinental Oil Co.'s No. 1 University, 1,980 ft. N and E of SW cor., Sec. 18, Blk. 18, University Land — Total depth 4,910 ft.

Transcontinental Oil Co. et al's No. 3 Sellman, 330 ft. from S and E, Sec. 7, Blk. Z, T.C.Ry. Sur. — Shut down 1,998 ft.; 400 ft. oil in hole; top pay 1,900 ft.; plugged back to shut off water.

Transcontinental Oil Co. et al's No. 1-A Sellman, 340 ft. from N and 330 ft. from E of SE, Sec. 12, Blk. 194, G.C.&S.F. Sur. — Drlg. 1,866 ft.

W. F. Walsh et al's No. 1 Scharbaur Cattle Co., 330 ft. S and 990 ft. E from C, Sec. 16, Blk. 136, T.&St. R.R. Sur. — Fishing 1,640 ft.

Walsh et al's No. 1 Shearer, 330 ft. from NE and NW of E, Sec. 89, Blk. 10, H.&G.N.R.R. Sur. — Shut down for machine.

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. — Location.

**PRESIDIO COUNTY**

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 — Shut down 1,635 ft.

**REAGAN COUNTY**

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land — Top pay 2,903 ft.; top pay 6,807 ft.; shut down 8,654 ft.

Hagan & Emeh and Amerada's No. 1 Sawyer Cattle Co., 330 ft. from S and 990 ft. from E lines of Sec. 125, Blk. 1, T.&P. Sur. — Shut down 2,850 ft.

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 — Showing oil and gas at 8,220 ft.; total depth 8,220 ft.; flowing average 125 bbls. daily.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 250 ft. from W of Sec. 25, Blk. 9 — Building rig.

Texon Oil & Land Co.'s No. 2-B University, 4,655 ft. from S, 250 ft. from W, Sec. 36, Blk. 9 — Top pay 8,131 ft.; total depth 8,300 ft.; flowed 75 bbls. per day for 6 days.

Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 — Drlg. 7,525 ft.

Westyde Investment Co.'s No. 1 Scott, 1,280 ft. N and 1,320 ft. from W, Sec. 177, Blk. 1, T.&P. Sur. — Location.

**REEVES COUNTY**

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor., Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. — Shut down 2,900 ft.

H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. — Shut down 380 ft.

Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 — Shut down 1,860 ft.; show oil 1,820 ft.; cleaning out after two shots; filled up 200 ft. with oil.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. — Shut down 3,575 ft.

David R. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 — Shut down 5,658 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. — Drlg. 872 ft.

**RUNNELS COUNTY**

Gibson & Johnson's No. 1 Johnson, 2,310 ft. N and 1,650 ft. W of SE cor., Sec. 150, E.T.R.R. Sur. — Total depth 2,415 ft.

Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. — Derrick.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 — Show oil 2,028 ft.; shut down 2,504 ft.

**SCHLEICHER COUNTY**

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. — Shut down 3,330 ft.

Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. — Shut down 6,305 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. — Drlg. 985 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. — Drlg. out plug 4,750 ft.

**SCURRY COUNTY**

Byrd & Harmon's No. 1 Murphy, Jr., 330 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. — Show oil 1,750 ft.; top pay 1,750 ft.; estimate 10 bbls. on pump; drlg. 2,610 ft.; 1,200 ft. oil in hole.

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. — Drlg. 4,235 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. — Spudded and shut down 300 ft.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. — Total depth 4,400 ft.

Magnolia Pet. Co.'s No. 1 More, 1,320 ft. from S and W, Sec. 379, Blk. 97 — Top salt 750 ft.; encountered 500,000 ft. gas 1,810 ft.; oil show 2,215 ft.; shut down 4,650 ft.

Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. — Drlg. 937 ft.

**SUTTON COUNTY**

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W — Location.

**TAYLOR COUNTY**

Condor Pet. Co.'s No. 1 Stoker, C of NW, Sec. 220, Blk. 64, H.T.C.R.R. Sur. — Drlg. 2,775 ft.

Eastland Oil Co. et al's No. 1 Teaff, 150 ft. from N and W of N 109-acre farm of 219-acre tract, W. Avery Sur. — Location.

A. H. Gibson et al's No. 1 Cody, 888 ft. N and 160 ft. W of SE cor., Lot 2, Sec. 18, Guadalupe County School Land — Plugged back 2,396 ft. and shot 60 qts. 2,374-93 ft.; cleaning out; shut down 2,467 ft.; top pay 2,370 ft.; 1,200 ft. oil in hole; pay 2,370-77 and 2,394-95 ft.; running tubing; swabbing 75 bbls. oil per day.

Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-ac. tract, Sec. 31, Guadalupe County School Land — Drlg. 2,250 ft.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land — Show oil 4,917 ft.; fishing 5,916 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P.R.R. Sur. — Drlg. 700 ft.

Mid-Continent Pet. Corp.'s No. 1 Lindsey, 239 ft. N and 219 ft. E of SW cor., Subd. 22, Guadalupe County School Land — Shut down 2,378 ft.; 300 ft. oil in hole; top pay 2,375 ft.

**TERRELL COUNTY**

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. — Drlg. 1,870 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. — Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. — Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C, Sec. 78, Blk. D-7, E.L.R.R. Sur. — Shut down 880 ft.; moved o.f machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. — Shut down 3,290 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. — Shut down 640 ft.

**TERRY COUNTY**

Atlantic et al's No. 1 Carlisle, 990 ft. from S and E of Sec. 58, Blk. E, E.L.&R.R. Sur. — Shut down 3,322 ft.

**TOM GREEN COUNTY**

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.T.C.R.R. Sur. — Spudded

Ellis' No. 3 Lewis, 1,350 ft. S and 450 ft. E of SW cor. Jas. Webb Sur. 77 but in Albert Black Sur. 75 — Shut down 485 ft.; show oil 390 ft.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Ringer Sur. — Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb. Sur. — Drlg. 2,390 ft.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land — Show oil 418-20 ft.; total depth 632 ft.

**UPTON COUNTY**

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. — Location.

Eppenauer Drlg. Co.'s No. 1 Chaney, 2,310 ft. from N and 330 ft. from W of Sec. 18, Blk. 3, M.-K.-T. Sur. — Top pay 2,290 ft.; total depth 2,400 ft.; plugged back to 2,382 ft.; shot 250 qts. from 2,365-90 ft.; 700 ft. fluid in hole.

Gulf Prod. Co.'s No. 3-B Hughes, 160 ft. N and 161 ft. W of most southerly SE cor. of its 200-ac. lease "B" out of Wm. Teer Sur. — Rig.

Pure Oil Co.'s No. 3 Hughes, 150 ft. S and 767 ft. E of NW of their 300 ac., Sec. 4, Wm. Teer Sur. — Partly rigged up; shut down.

**VAL VERDE COUNTY**

A. Bluhm's No. 1 Yoast, 1,760 ft. N, 600 ft. W of SE cor., Sec. 31, Blk. 3, I.&G.N. Sur. — Machine on ground.

Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. — Shut down 4,850 ft.

O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. — Gas sand 2,491-2,520 ft.; tested 125,700 ft. gas; drlg. by tools 5,757 ft.

Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur. — Show oil 1,525 ft.; fishing 3,035 ft.

Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y — Shut down 4,009 ft.

**WARD COUNTY**

Anderson et al's No. 1 Boogher et al, 3,364 ft from NE and 2,497 ft. from SE of Sec. 11, Blk. 5, H.&T.C. Sur. — Drlg. 2,280 ft.

Dearborn et al's No. 1 Boogher, 1,375 ft. NE and 735 ft. SE of N cor., Sec. 7, Blk. 32, but in Sec. 11, Blk. 5, H.&T.C.R.R. Sur. — Drlg. 2,085 ft.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur. — Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.

R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur. — Shut down 380 ft.

Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Show gas 2,806-09 ft.; drlg. 5,000 ft.

Richardson et al's No. 2 O'Brien, 322 ft. from N and 1,020 ft. from W of Sec. 5, Blk. F, G.M.M.B.&A. Sur... Drlg. 2,500 ft.

Shipley et al's No. 5 Hayzlett, assume ccommon line Secs. 16 and 17, is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.

Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Drlg. 670 ft.

J. E. Smith's No. 1 Clement, 152 ft. SW of NE line and 152 ft. SE of NW line, Lot 7, Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ..... Top salt 745 ft.; drlg. 1,370 ft.

Sturm & Paine's No. 1 Cummins, 748 ft. from NE and 155 ft. from NW of Sec. 7, Blk. 32, H.&T.C.R.R. Sur... Shut down 2,350 ft.; show oil and gas 2,170 ft.; not flowing; made 125-bbl. head after standing 30 days.

Sun Oil Co.'s No. 1 Sealy, 330 ft. from N and E of Sec. 88, Blk. F, G.M.M.B.&A. Sur. ..... Shut down 2,575 ft.

**WINKLER COUNTY**

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; shut down 2,882 ft.; show oil 2,775-85 ft.

Liner Drlg Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Show oil 3,670-79 ft.; shot 10 qts. from 3,670-79 ft.; no results; shut down 3,735 ft.

Shell and The Texas Company's No. 1-B Cowden, 660 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... First gas 2,290 ft.; increase 2,580 ft.; total 3,500,000 ft. gas (estimated); drlg. 2,830 ft.

Shell et al's No. 8 Scarborough, 1,020 ft. from N and 1,650 ft. from E of Sec. 2, Blk. 77, Public School Land ..... Drlg. 3,050 ft.; top pay 2,982 ft.; flowing by heads into pit.

Simms Oil Co.'s No. 1 Sealy, C of SE Sec. 49, Blk. F, G.M.M.B&A. Sur. ..... Location.

## WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 82)

Texas Interstate P. L. Co.'s No. 1 Sanford, C NW NE, Sec. 4, Blk. 3, A.B.&M. Sur. ..... Drlg. 2,350 ft.

**CASTRO COUNTY**

Colorado O. & R. Co.'s No. 1 Slemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur. ..... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

**CHILDRESS COUNTY**

Continental Oil Co. and Sun Oil Co.'s No. 1 Johnson, 660 ft. NE, Sec. 580, Blk. H, W.&N.W. Sur. ..... Drlg. 3,160 ft.

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F.P. Knott lands ..... T.D. 5,000 ft.; C.O.

**COCHRAN COUNTY**

Westbrook et al's No. 1 Slaughter, 400 ft. S and E, Labour 67, League 118, Knox County School Lands .. Drlg. 5,330 ft.

**COLLINGSWORTH COUNTY**

Shoupe Bros.' No. 1 Aldus, 410 ft. N, 330 ft. E, Sec. 96, Blk. 16, H.&G.N.R.R. Sur. ..... Show oil and gas 1,678 ft.; bailed estimate 10 bbls. first day from G.W. 2,194-98 ft; S.D. 2,401 ft.

Shoupe Bros.' No. 1 Whitson, 330 ft. N and E, SW, Sec. 33, Blk. 12, H.&G.N.R.R. Sur. ..... Spudded and S.D.

**DONLEY COUNTY**

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... T.D. 3,006 ft.; contract depth.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 4,000 ft.

**GRAY COUNTY**

Baldridge & Lilley's No. 1 Melton, 330 ft. N and W, E½ SE, Sec. 95, Blk. B-2, H.&G.N.R.R. Sur. .. ... S.D. 2,475 ft.

Cockrell-McIlroy Oil Co.'s No. 1 Castleberry, 330 ft. S and E, Sec. 126, Blk. 3, I.&G.N. Sur. ..... S.D. 3,280 ft; 1,300 ft. oil in hole; T.P. 3,263 ft.

Cockrell-McIlroy Oil Co.'s No. 1 Sailor, 330 ft. out of NW SW NE, Sec. 138, Blk. 3, I.&G.N. ..... Drlg. 2,100 ft.

Danciger O. & R. Co.'s No. 1 Catlin et al, 175 ft. S, 300 ft. E of N 71 ac. of E 231 ac., Sec. 57, Blk. 3, I.&G.N. Sur. ..... Drlg. 900 ft.

Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,505 ft.

Danciger O. & R. Co.'s No. 1 Shaw, 330 ft. S, 286 ft. E of E 39½ ac., NW, Sec. 5, Blk. 1, A.C.H.&B. Sur.... T.D. 2,588 ft.

Empire G. & F. Co.'s No. 1-B Archer, 330 ft. each way of SW cor. SW, Sec. 139, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,870 ft.

Empire G. & F. Co.'s No. 2 Hexter, C SE, Sec. 235, Blk. B0Z, H.&G.N. Sur. ..... Drlg. 2,346 ft.

Empire G. & F. Co.'s No. 1 Shields, 330 ft. each way out of SE cor. NE, Sec. 151, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 3,050 ft.

Empire G. & F. Co.'s No. 1 Whittemore, 2,310 ft. N and W, Sec. 14, Blk. 4, I.&G.N. Sur. ..... Location.

Follett Pet. Corp.'s No. 1 Hood, 330 ft. S and W of W 80 ac., SW, Sec. 32, Blk. 3, H.&G.N.R.R. Sur. ..... T.D. 3,143 ft.; C.O. after shot.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.

Humble O. & R. Co.'s No. 1 Young, C SW, Sec. 110, Blk. 3, I.&G.N. Sur. ..... Rig.

LeFlore Pet. Corp.'s No. 1 Wilson, 330 ft. N and E, Sec. 1, B.S.&F. Sur. ..... S.D. 220 ft; to rerun csg.

Lenix et al's No. 1 Bradford, 330 ft. N and E, W½ SE, Sec. 118, Blk. B-2, H.&G.N.R.R. Sur. ..... S.D. 2,230 ft.

Lyon et al's No. 1-A Morse, 330 ft. S and W, NW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... Drlg. 733 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&T.N. Sur. ..... Drlg. 1,700 ft.

Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... 9,000,000 ft. gas 2,325-35 ft.; T.D. 2,775 ft.; to shoot.

Magnolia Pet. Co.'s No. 5 Magnolia, 990 ft. N, 330 ft. E, SW cor., Sec. 14, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,175 ft; S.G. 2,100 ft.

McAuley et al's No. 4 Morse, 330 ft. N and W, SE cor. NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ..... Rig.

McIlroy Oil Co.'s No. 1 Vallmert, 330 ft. each way out of SE cor., NW, Sec. 140, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,855 ft.

Midwest Explin. Co. et al's No. 1 Wagoner, 1,320 ft. W, 330 ft. N, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Location.

Oil Operators' No. 1 Bowers, 330 ft. N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. ..... Show oil and gas 2,400-17 ft.; S.O. 3,036-55 ft.; first gas 2,483 ft., increase at 2,500 ft., 2,544 ft. and 2,950 ft.; S.D. 3,090 ft.

Prairie O. & G. Co.'s No. 2 Laugham, 330 ft. S and E, NW cor., W 230.3 ac. of S 310.5 ac., Sec. 1, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,896 ft; swbng. 90 bbls. oil daily; T.P. 2,742 ft.

Prairie O. & G. Co.'s No. 1 Worley, 330 ft. each way out of NW cor. NW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur... S.D. 2,823 ft; T.P. 2,783 ft; swbng. 800 bbls. oil daily.

Prairie O. & G. Co.'s No. 2 Worley, 330 ft. each way out of NE cor. NW, Sec. 36, Blk. 3, I.&G.N. Sur. ..... S.O. 2,847 ft; S.D. 2,845 ft; T.P. 2,783 ft. and 2,823 ft; swbng. 1,100 bbls. daily.

Prairie O. & G. Co.'s No. 3 Worley, 330 ft. each way out of SE cor. NW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur.... S.G. 2,284 ft. and 2,312 ft; S.D. 2,751 ft.

Saulsbury et al's No. 1 Sheridan, 330 ft. S and E, W½ NE, Sec. 184, Blk. B-2, H.&G.N. Sur. ..... Spudded and S.D.

W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. ..... Drlg. 700 ft.

So. Pet. Explin. Co.'s No. 1 Vaughn, 330 ft. N and W, SW, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,950 ft.

Reynolds et al's No. 1 Webb, 330 ft. N, 380 ft. E, NW, Sec. 60, Blk. 25, H.&G.N.R.R. Sur. ..... Fishing 2,370 ft.

Rieger & Steckoll's No. 1 Bohr, 330 ft. S and E, Sec. 37, Blk. B-3, H.&G.N. Sur. ..... S.D. 3,509 ft.

Stover and Sheil's No. 1 Saunders, 990 ft. N, 330 ft. E, N 100 ac. of W 149 ac., Sec. 3, B.&B. Sur. ..... 2,000,000 ft. gas 2,670-75 ft.; T.D. 2,956 ft.; shot 60 qts.; no results; C.O.

Vulcan O. & G. Co.'s No. 1 Carpenter, 330 ft. N and W, W 80 ac., NW, Sec. 25, Blk. 25, H.&G.N.R.R. Sur. ..... Drlg. 2,465 ft.

Wilson et al's No. 1 Heaston, 330 ft. S and W, Sec. 160, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,950 ft.

Wright Wilson, trustee's No. 1 Chapman, 175 ft. S and E lines, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. ..... S.O. 2,685 ft.; S.D. 2,800 ft.

**HARTLEY COUNTY**

Dana O. & G. Co.'s No. 1 Fritz, C NE, Sec. 81, Blk. 44, H.&T.C.R.R. Sur. ..... T.D. 3,828 ft; h.f.w.; will plug back for gas well.

**HUTCHINSON COUNTY**

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. N 160 ac., S 240 ac., Sec. 85, Blk. 46, H. &T.C. Sur. ..... S.O. and wtr. 3,010-11 ft.; S.D. 3,095 ft.

Alexander et al's No. 1 Johnson, 1,709 ft. E, 330 ft. N, N 80 ac., E½, E. T. Tomlinson Sur. ..... Set 6-in. csg; S.D. 2,987 ft; S.O.

Continental Oil Co.'s No. 1 Johnson-E, 330 ft. N and E, SW cor. SE, Sec. 5, Blk. I, B.&B. Sur. ..... Drlg. 3,515 ft.

Danciger O. & R. Co.'s No. 1 Cheatham, 330 ft. N and E, SW SE, Sec. 38, Blk. Y, A.&B. Sur. ..... S.D. 2,450 ft.

Danciger O. & R. Co.'s No. 3 Moore, 330 ft. S and E, NW W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. ..... 1,000 ft. oil in hole 3,003-20 ft.; S.D. 3,030 ft.

Danciger O. & R. Co.'s No. 4 Moore, 330 ft. N and E, SW cor. W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur... T.D. 3,040 ft; T.P. 2,968-78 ft. and 3,005-15 ft; I.P. 75 bbls.

Dixon Creek Oil Co.'s No. 2 Cheatham, 330 ft. N, 1,650 ft. W, SE cor. N½ SE, Sec. 38, Blk. Y ..... Drlg. 2,975 ft.

Dixon Creek Oil Co.'s No. 1 Johnson Bros., 50 ft. S, 330 ft. W, NE cor. E 80 ac., J. Gammon Sur. ..... S.D. 3,071 ft; C.O.

Midwest Explin. Co.'s No. 1-B Garner et al, 330 ft. N, 990 ft. W, Sec. 124, Blk. 4, I.&G.N.R.R. Sur. ..... Drlg. 2,983 ft.

Phillips Pet. Co.'s No. 1 Johnson-Burl, 330 ft. S and W, NE cor. W 240 ac., N 320 ac., Sec. 4, Blk. 1, B.&B. Sur. ..... Drlg. 3,010 ft.

Phillips Pet. Co.'s No. 1 Johnson-Trammel, 930 ft. N, 330 ft. W, SE cor. W½ NW, Sec. 38, Blk. Y ..... T.D. 3,250 ft; plugging back.

Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur. ..... C.O. 2,955 ft.

Phillips Pet. Co.'s No. 1 Johnson-Rudy, 330 ft. W, 330 ft. S, SW SW, Sec. 30, Blk. Y, A.&B. Sur. ..... Drlg. 2,927 ft.

Phillips Pet. Co.'s No. 1 Vake (Hazel), 330 ft. N and W, Sec. 4, Blk. XO2, H.O.&B. Sur. ..... Drlg. 450 ft.

Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... S.D. 2,250 ft.

Texarado Oil Co.'s No. 2 Stanford, 330 ft. S, 990 ft. W, NE cor., N 80 ac., S 160 ac., Sec. 83, Blk. 46, H.& T.C.R.R. Sur. ..... T.D. 3,023 ft; C.O.

Texas State Oil Co.'s No. 1 Dunaway, 330 ft. S and W, NE, Sec. 5, Blk. 2-Y, T.T.&R.R. Sur. ..... Rig.

**LAMB COUNTY**

Graham O. & G. Co. et al's No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... S.D. 4,408 ft.

**LIPSCOMB COUNTY**

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.G. 3,760 ft; S.D. 3,890 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,954 ft.

**LUBBOCK COUNTY**

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft.; S.D. 4,167 ft.

**MOORE COUNTY**

Delmar Oil Co.'s No. 1 Jones, 990 ft. E, 330 ft. N, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Location.

Fritch O. & G. Co.'s No. 1 Lee Bivins, C N 40 ac., N 160 ac., Sec. 4, George Mahan Sur. ..... S.D. 3,212 ft.

Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. ..... Gas, estimated 15,000,000 ft. 3,050-60 ft; drlg. 3,511 ft.

Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. each way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. ..... S.D. 3,080 ft.

Shamrock O. & G. Co.s No. 1 Shory, 330 ft. N and W, NE, Sec. 187, Blk. 3-T, T.&N.O. Sur. ..... Drlg. 1,000 ft.

**MOTLEY COUNTY**

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M ..... S.D. 4,011 ft.

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 580 ft.

**POTTER COUNTY**

Canadian River Gas Co.'s No. 1-N Masterson, 330 ft. E, 1,320 ft. S, Sec. 17, Blk. 3, G.&M.R.R. Sur. ..... Drlg. 2,405 ft.

**RANDALL COUNTY**

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 .. S.D. 1,250 ft.

Texas Interstate P. L. Co.'s No. 1 Masterson, C, Sec. 37, Blk. B-10, E.L.R.R. Sur. ..... Location.

**ROBERTS COUNTY**

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ..... Shot 10 qts. 5,270-93 ft.; S.O. 5,288 ft.; S.D. 5,992 ft.

**WHEELER COUNTY**

Anderson's No. 1 Reneau, C SW NE, Sec. 98, Blk. 23, H.&G.N. Sur. ..... Drlg. 695 ft.

Dunaway Bros.' No. 1 Worley, 330 ft. S and W, NE cor. NW, Sec. 39, Blk. 24, H.&G.N.R.R. Sur. ..... T.D. 2,120 ft.; 5,000,000 ft. gas 2,025-35 ft.

Four Leaf Drlg. Co.'s No. 1 Jackson, 330 ft. S and W, NE, Sec. 11, Blk. 27, H.&G.N. Sur. ..... S.D. 2,175 ft; S.G. 2,170 ft.

Johnson et al's No. 2 Hicks, 890 ft. W, 990 ft. S, Sec. 49, Blk. 17, H.&G.N. Sur. ..... S.D. 450 ft.

Lone Star Gas Co.'s No. 1 Brown, C NW NE, Sec. 53, Blk. 23, H.&G.N.R.R. Sur. ..... Location.

Lone Star Gas Co.'s No. 1 Finley, C SW NW, Sec. 66, Blk. 17, H.&G.N. Sur. ..... Location.

Lone Star Gas Co.'s No. 2 Hicks (Martin), C NW NE, Sec. 52, Blk. 17, H.&G.N.R.R. Sur. ..... Location.

Lone Star Gas Co.'s No. 1 Nickell, C NW NW, Sec. 64, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,500 ft.

Lone Star Gas Co.'s No. 1 Ridinger, C NW NW, Sec. 65, Blk. 17, H.&G.N. Sur. ..... Rig on ground.

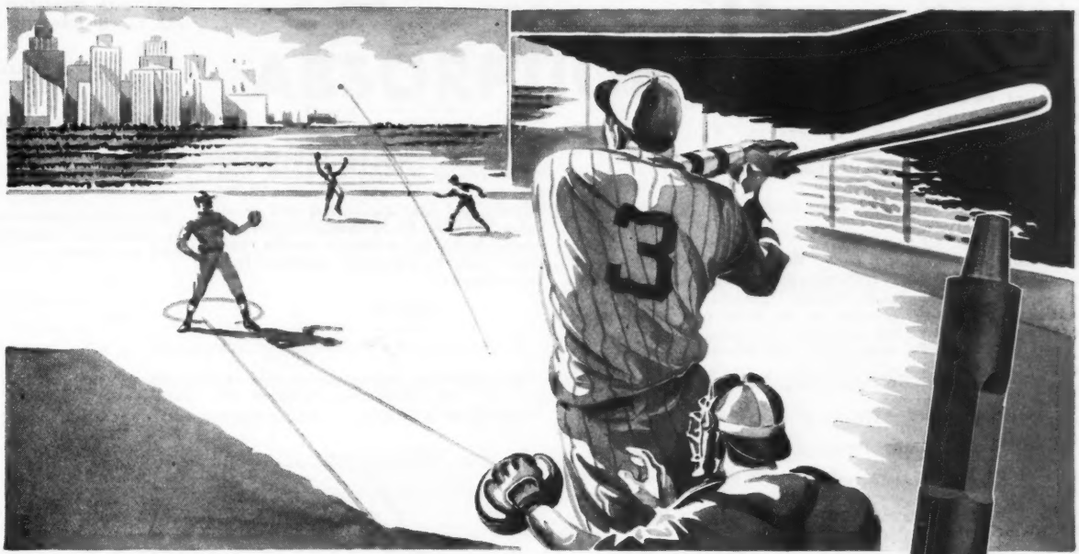
McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H.&G.N. Sur. ..... Drlg. 450 ft.

Upham Gas Co.'s No. 1 Fee, 660 ft. S, 330 ft. W, W½ SW SE, Sec. 74, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,590 ft.

Upham Gas Co.'s No. 1 Hoshor, C SE SW, Sec. 69, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,220 ft.

Wischkamper et al's No. 2 Brown, C SE NE, Sec. 53, Blk. 23, H.&G.N.R.R. Sur. ..... Drlg. 1,630 ft.

# THE WORLD'S MIGHTIEST BLOWS



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# GUIBERSON

BETTER BE SAFE THAN SORRY

# Analysis of Absorption of Oil Problems

## Apply Theoretical Data Based on Mathematical Formulae to Practical Phases of Natural Gasoline Operation

By Alois Kremser
Standard Oil Co. of California*

It is the purpose of this paper to present a mathematical analysis of the relations underlying the oil absorption process, especially as applied to the extraction of gasoline from natural gas. General equations are derived for evaluating the effect of important variables, such as pressure temperature, oil rate, number of plates, plate efficiency, richness and composition of gas, physical properties of absorption oil, etc., on the performance of absorbers and on the efficiency of extraction.

To simplify the mathematical analysis, the assumption is made that pressure, oil rate, gas rate and temperature are constant throughout the absorber. This condition is approximated in average field practice, especially if efficient extraction of butanes is attempted. The assumption is not fulfilled with gases of abnormal richness such as refinery vapors or with high pressure plants in which a high saturation of the oil is obtained. In such cases it will be necessary to apply the theory to the conditions as they obtain both at the top and bottom of the absorber and to estimate probable results from the data thus computed.

Absorption is essentially a vapor pressure phenomenon. The driving force is the difference between the partial pressure of a constituent in the gas and the vapor pressure due to the portion absorbed in the liquid. If this difference is zero, no further absorption is possible; in other words, equilibrium has been reached. The mathematical treatment is based on the assumption that Raoult's law may be applied. This is another limitation of the analysis.

It will be shown that computations based on the total gasoline content of gas, without regard to its composition, must, by necessity, be misleading. The absorption of each constituent, such as butane, pentane, etc., is practically independent of the others. The absorption of each constituent of the gas will, therefore, be treated individually.

The theory presented here has been a valuable aid in our operation, as a basis for evaluating test data for plant control and design of new plants. Experience with over 40 plants covering practically all the variations encountered in normal practice has indicated that the assumptions outlined above do not detract seriously from the usefulness of the theory for all practical purposes.

### PART 1—DERIVATION OF EQUATIONS

#### 1. Nomenclature

- P Absorber pressure, pounds per square inch absolute.
- p Vapor pressure of gasoline fraction at a given temperature, pounds per square inch absolute.
- G Oil to gas ratio, gallons per 1,000 standard cubic feet (measured at 60° F. and 14.7 pounds per square inch absolute.
- y Gasoline content of gas, gallons per 1,000 standard cubic feet.
- x Saturation of oil, per cent gasoline by volume.
- q Equilibrium constant, defining the equilibrium between x and y; $x = qy$.
- s Saturation of oil, expressed in mol per cent.
- r Ratio of mol percentage to volume percentage.
- v Standard cubic feet of vapor per gallon of gasoline.
- M Molecular weight of absorption oil (sponge).
- m Molecular weight of gasoline fraction.
- D Specific gravity of sponge.
- d Specific gravity of gasoline fraction.
- t Temperature ° F.
- n Number of plate, plate n+1 is below plate n.
- A Absorption factor $A = \frac{Gq}{100}$.

*Annual convention, Natural Gasoline Association of America, Tulsa, May 20-22.

#### 2. Equilibrium Relations

(a) Relation Between Mol Percentage and Volume Percentage.—The vapor pressure of the solute is proportional to the molecular percentage. As it is customary to use volume percentages in plant practice, a simple relation between the two is desirable:

Given: M and m, molecular weight of sponge and gasoline fraction.
D and d, specific gravity of sponge and gasoline fraction.
100 — x and x, volume percentages.

The number of mols will be proportionate to:

$$\frac{xd}{m} \text{ and } \frac{(100-x)D}{M}$$

The mol percentages will, therefore, be:

$$s = \frac{100\,\frac{xd}{m}}{\frac{xd}{m} + \frac{(100-x)D}{M}} \qquad (1)$$

$$s = \frac{100x}{x\left(1 - \frac{Dm}{dM}\right) + 100\,\frac{Dm}{dM}}$$

In absorption practice the saturation is generally sufficiently low to permit neglecting the first term in the denominator. Equation 1 can, therefore, be simplified to:

$$s = x\,\frac{dM}{Dm} \qquad (2)$$

The ratio r of mol percentage to volume percentage is, therefore:

$$r = \frac{dM}{Dm} \qquad (3)$$

(b) Equilibrium Equation.—If a gas at an absolute pressure P contains y gallons per 1,000 standard cubic feet of a gasoline fraction having v cubic feet of vapor per gallon of liquid, the partial pressure of the vapor will be:

$$\text{Partial pressure} = \frac{yvP}{1000} \text{ lbs. per sq. in.}$$

If the absorption oil contains x volume per cent of a gasoline fraction, which has at a given temperature a vapor pressure p and a mol-vol. per cent ratio r, the vapor pressure of the absorbed gasoline will be:

$$\text{Vapor pressure} = \frac{rxp}{100} \text{ lbs. per sq. in.}$$

For equilibrium the partial pressure and vapor pressure as defined above will be equal, or

$$\frac{rxp}{100} = \frac{yvP}{1000}$$

$$x = \frac{vP}{10rp}\,y = qy \qquad (4)$$

A general relation may be derived for v, the volume of vapor per gallon, from the fact that 1 gallon weighs 8.33d pounds, and that the pound mol of all gases (at 60° F. and 14.7 pounds per square inch) has a volume of 379 cubic feet, v may be computed, therefore, from the relation:

$$v = \frac{8.33d\ 379}{m} = 3156\,\frac{d}{m} \qquad (5)$$

By combining the equations (3), (4) and (5) the equilibrium equation assumes the form:

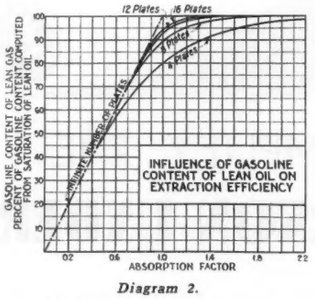
12 Plates
16 Plates
GASOLINE CONTENT OF LEAN GAS PERCENT OF GASOLINE CONTENT COMPUTED FROM SATURATION OF LEAN OIL
INFLUENCE OF GASOLINE CONTENT OF LEAN OIL ON EXTRACTION EFFICIENCY
ABSORPTION FACTOR

*Diagram 2.*

$$x = \frac{3156d\ PDm}{m\ 10dMp}\,y = qy, \text{ and}$$

$$q = \frac{315.6\ DP}{Mp} \qquad (6)$$

"q" may be defined as the equilibrium constant. It is a function of absorber

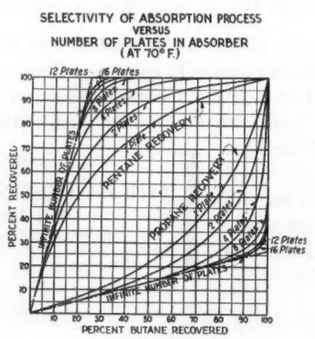


*Diagram 3.*

pressure, vapor pressure of gasoline fraction and physical properties of sponge, but independent of all other variables involved in the absorption process.

#### 3. Analysis of Single Plate

The $n^{th}$ plate shall be considered. Oil from the plate above will enter it with a saturation $x_{n-1}$, gas from the plate below with a gasoline content $y_{n+1}$. Oil and gas will approach on the $n^{th}$ plate an equilibrium, depending on temperature and pressure conditions, defined by equation (4), namely:

$$x_n = q\,y_n$$

The oil rate is assumed as G gallons per 1,000 cubic feet. G gallons of oil entering with saturation $x_{n-1}$ and leaving with $x_n$ will take up:

$$\frac{G}{100}(x_n - x_{n-1}) \text{ gallons of gasoline.}$$

1,000 cubic feet of gas entering with gasoline content $y_{n+1}$ leaving with $y_n$ give up

$$y_{n+1} - y_n \text{ gallons of gasoline.}$$

The two quantities must be equal, also the equilibrium equation (4) may be applied as follows:

$$\frac{G}{100}(x_n - x_{n-1}) = y_{n+1} - y_n$$

$$x_n = q\,y_n \text{ and } x_{n-1} = q\,y_{n-1}$$

These equations may be combined, as follows:

$$\frac{Gq}{100}(y_n - y_{n-1}) = y_{n+1} - y_n \qquad (7)$$

The term $\frac{Gq}{100}$ shall be defined by the symbol A and designated as absorption factor

$$A = \frac{Gq}{100} \qquad (8)$$

Equation (7) can be solved for $y_n$, giving the important relation

$$y_n = \frac{y_{n+1} + A\,y_{n-1}}{1 + A} \qquad (9)$$

#### 4. Absorption Factor

It is evident from the above derivation that the performance of an absorber may be defined in terms of a single factor designated as absorption factor. By combining equations (6) and (8) it may be expressed by the relation:

$$A = \frac{3.156\ DPG}{Mp} \qquad (10)$$

It will be noted that the absorption factor is directly proportional to absorber pressure and oil rate, and inversely proportional to the molecular weight of the absorption oil and the vapor pressure of the individual gasoline fractions, which, in turn, are defined by temperature.

According to this derivation, the absorption factor defines completely the absorption phenomenon; in other words, it is immaterial under what conditions the absorption process is carried out as long as the value of the absorption factor remains constant.

#### 5. The Multiple Plate Absorber

(a) Single-Plate Absorber.—By applying equation (9) to a single plate it may be written:

$$y_1 = \frac{y_2 + Ay_0}{1 + A} \qquad (11)$$

$y_2$ is evidently the gasoline content of the gas entering the plate and, therefore, the absorber. $y_0$ is the gasoline content of a gas in equilibrium with the known saturation $x_0$ of the oil entering the absorber and may be computed from the latter by the relation $x_0 = qy_0$.

(b) Two-Plate Absorber.—The gasoline content of the gas leaving the bottom

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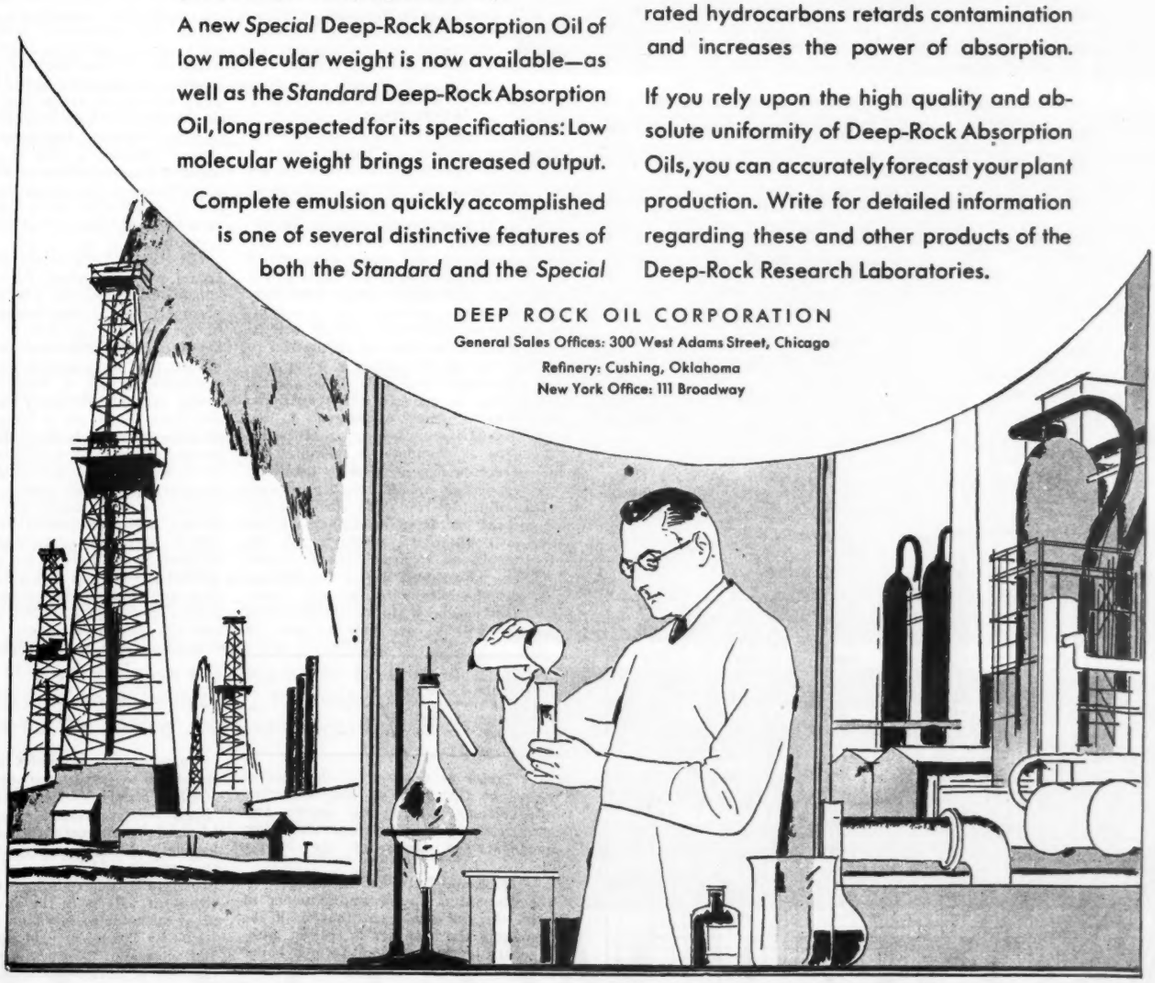

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plate may be computed from equation (9):

$$y_2 = \frac{y_0 + Ay_1}{1 + A} \qquad (12)$$

By introducing $y_1$ from equation (11) and solving for $y_2$, the following relation is obtained:

$$y_2 = \frac{(A+1)y_3 + A^2 y_0}{A^2 + A + 1} \qquad (13)$$

(c) Three-Plate Absorber.—By applying equation (9) to $y_3$ and substituting equation (13) for $y_2$ and solving for $y_3$, the latter may be expressed as:

$$y_3 = \frac{y_4(A^2 + A + 1) + A^3 y_0}{A^3 + A^2 + A + 1} \qquad (14)$$

This may also be written in the form:

$$y_3 = \frac{\frac{A^3 - 1}{A - 1} y_4 + A^3 y_0}{\frac{A^4 - 1}{A - 1}} = \frac{(A^3 - 1)y_4 + A^3(A - 1)y_0}{A^4 - 1} \qquad (15)$$

(d) n-Plate Absorber.—Equation (15) for the three-plate absorber indicates the form of the general equation. It may be written:

$$y_n = \frac{y_{n+1}(A^n - 1) + (A - 1)A^n y_0}{A^{n+1} - 1} \qquad (16)$$

The gasoline content $y_n$ of the gas leaving the bottom plate is of little interest. But the saturation $x_n$ of the oil leaving the absorber may be computed from equation (16) and the relation $x_n = qy_n$.

Of special interest is the gasoline content of the gas leaving the absorber, or in our nomenclature $y_1$. It may be found as follows:

The gasoline extracted by G gallons is: $\frac{G(x_n - x_0)}{100}$, the gasoline given up by 1,000 cubic feet, and equals $y_{n+1} - y_1$. Therefore:

$$\frac{G(x_n - x_0)}{100} = y_{n+1} - y_1, \text{ or introducing}$$

$x_n = q\,y_n$; $x_0 = q\,y_0$; and $\frac{Gq}{100} = A$

$$A(y_n - y_0) = y_{n+1} - y_1 \qquad (17)$$

Combining (16) and (17), there results the important equation:

$$y_1 = \frac{(A-1)}{A^{n+1} - 1} y_{n+1} + \frac{A(A^n - 1)}{A^{n+1} - 1} y_0 \qquad (18)$$

$y_{n+1}$ is the gasoline content of the gas entering the absorber.

$y_0 = \frac{x_0}{q}$ can be computed from the saturation $x_0$ of the lean oil entering the absorber. The absorption factor A has been discussed above. Equation (18) represents, therefore, a general solution of the absorption problem, by which all factors entering the problem may be evaluated.

It will be noted that the first term in equation (18) is only a function of the richness of the gas entering the absorber, of the absorption factor and of the number of plates. It represents the limit to which the gasoline content of the gas could be reduced if the oil entering the absorber were perfectly stripped, that is, would contain no gasoline fractions. The second term defines the limitations imposed on absorption efficiency by the gasoline content of the lean sponge, that is, of the oil entering the absorber. The two terms are entirely independent of each other, except that their sum represents the gasoline content of the gas leaving the absorber.

**6. Equilibrium and Transfer Theory.**

The analysis so far has been based on equilibria only without any regard to the mechanism by which equilibrium is established. Actually the transfer of gasoline fractions from vapor to liquid will depend: on the driving potential, that is, the difference between the partial pressure in the vapor phase and the vapor pressure in the liquid phase; the contact area between liquid and vapor, be it in the form of grids or similar contact devices, or in the form of bubbles, as in plate absorbers; the time of contact; and the transfer coefficient, that is, the amount transferred per unit of area in unit time per unit of driving potential.

The absorber may be assumed as subdivided into a number of equal units, each representing a theoretical plate. The transfer surface and time of contact available in each unit will be substantially constant, especially for the problem discussed, in which the flow rates of both liquid and gas are essentially constant throughout the absorber.

The transfer factor is primarily a function of the physical properties of the substances involved and of velocity. It will, therefore, be substantially constant throughout the absorber.

Under these conditions an analysis based on equilibria will be justified only if it can be shown that the amount transferred on each theoretical plate is proportionate to the driving potential on each plate.

This condition is fulfilled, as shown by the following analysis of the $n^{th}$ plate:

Qn Amount transferred on $n^{th}$ plate.
Fn Initial driving potential on $n^{th}$ plate.

Gas enters and leaves the $n^{th}$ plate with a richness $y_{n+1}$ and $y_n$. The amount transferred is therefore:

$$Qn = y_{n+1} - y_n \qquad (19)$$

By substituting equation (9) for $y_n$, (19) may be written:

$$Qn = \frac{A}{1 + A}(y_{n+1} - y_{n-1}) \qquad (20)$$

The partial pressure of the entering gas is $y_{n+1}\frac{vP}{1000}$. The vapor pressure of the sponge, coming from plate n — 1, with saturation $x_{n-1}$, is $x_{n-1}\frac{pr}{100}$. The initial driving potential is therefore:

$$Fn = y_{n+1}\frac{vp}{1000} - x_{n-1}\frac{pr}{100} \qquad (21)$$

According to equation (4), the second term in equation (21) may be written:

$$x_{n-1}\frac{pr}{100} = \frac{vP}{1000} y_{n-1}$$

| | | |
|---|---|---|
| Number of theoretical plates.. | 3 | 4 |
| Absorption factor ..... | 4.2 | 2.8 |

Equation (21) therefore assumes the form:

$$Fn = \frac{vP}{1000}(y_{n+1} - y_{n-1}) \qquad (22)$$

Equations (20) and (22) may be combined as follows:

$$\frac{Qn}{Fn} = \frac{1000A}{vP(1 + A)} = \text{constant} \qquad (23)$$

It is found that the amount of gasoline transferred on each theoretical plate is directly proportional to the initial driving potential, although the analysis is based on equilibria only. Without discussing these relations in further detail, the conclusion appears justified that under these conditions the final results would be substantially the same, whether the absorption phenomenon is analyzed from the viewpoint of the transfer or from that of the equilibrium theory.

## PART 2—APPLICATION TO PLANT PRACTICE

The mathematical relations established in the first part of the paper permit a quantitative evaluation of every important variable entering the absorption problem. One of the most important variables, it has been shown, is the absorption factor. Since the value of the latter depends on the vapor pressure of the individual gasoline constituents it will be evident that with other conditions such as pressure, oil rate, etc., constant, the absorption factor for butane will be much lower than that of pentane; in other words, the absorption of every gasoline constituent will have to be treated individually. In general, it will be desirable, however, that extraction of the heavier constituents beginning with isopentane be as complete as possible. Butane extraction will be more or less complete, depending on the quality of natural gasoline desired. The size of plant and general operating conditions will be determined, therefore, primarily by the requirements as regards butane extraction. The absorption factor for butane, or briefly the butane factor, will, therefore, be of special significance. For that reason it will be desirable to use the butane factor as a basis for the general analysis of the problem, and to define the conditions, which will insure any desired extraction efficiency for other constituents in terms of the butane factor.

1. Relations Between Gasoline Content, Absorption Factor and Number of Plates.—In the ideal case, that is, if the oil entering the absorber is free of gasoline constituents, the second term in equation (18) is zero. It may be written, therefore, in the form:

$$\frac{100\,y_1}{y_{n+1}} = \frac{100(A-1)}{A^{n+1} - 1} \qquad (24)$$

$y_1$ and $y_{n+1}$ are the gasoline content of the gas leaving and entering the absorber, or equation (24) gives the gasoline content of the discharge gas, expressed as a percentage of the gasoline content of the gas entering the absorber.

For the purpose of further discussion it will be more convenient to present the relations defined by equation (24) in graphical form, as shown in Diagram 1.

(a) Number of Plates.—The diagram illustrates strikingly the importance of an adequate number of plates for efficient extraction. To reduce, for instance, the richness of the discharge gas in any individual gasoline constituent to 1 per cent of that of the intake gas, the following absorption factors would be required with different numbers of plates:

| | | | | | |
|---|---|---|---|---|---|
| 6 | 8 | 12 | 16 | infinite |
| 1.9 | 1.56 | 1.3 | 1.2 | 0.99 |

As the required oil rate and absorber pressure are directly proportional to the absorption factor, it is evident that large savings in plant equipment will result if an adequate number of plates are provided in the absorber. The saving will be very marked up to about 12 theoretical plates, but will be less pronounced from then on. For instance, the reduction in oil rate between 8 and 12 plates is about the same as between 16 and an infinite number of plates. The economical number of theoretical plates will, therefore, lie between rather definite limits. The statement appears justified that it should not be less than 12 plates, but that the gain from increasing it beyond 16 plates will be relatively insignificant.

If less efficient extraction is desired, the number of plates is of less significance. For instance, if 20 per cent of any individual constituent may be rejected, the absorption factors for six, eight and an infinite number of plates would be 0.88, 0.84 and 0.8, respectively; in other words, little would be gained by going beyond six theoretical plates. This conclusion is of practical interest only in specific instances, discussed later. For general practice it will be preferable to install a number of plates which will permit efficient extraction without the necessity of using abnormally high absorption factors, that is, oil rates or absorber pressures.

(b) Plate Efficiency.—The number of actual plates required, for instance in a bubble plate absorber, will depend on the plate efficiency. An important problem in that connection will be the relation between plate efficiency and number of plates, that is, whether it is more economincal to use a smaller number of plates of high efficiency and, therefore, elaborate design or a larger number of plates of relatively low efficiency. Diagram 1 permits of a convenient analysis of this problem. Assuming a 16-plate absorber with 62.5 per cent plate efficiency, its performance will be equivalent to an absorber having 10 theoretical plates. It will be evident that a 12-plate absorber would have to have an efficiency of 83.5 per cent to give the same extraction, and that an eight-plate absorber, no matter how high its efficiency, could not give the same performance. The effect on extraction can be estimated as follows:

| | | | | | |
|---|---|---|---|---|---|
| Number of actual plates ..... | ... | 20 | 16 | 12 | 8 |
| Assumed plate efficiency ..... | ... | 62.5 | 62.5 | 83.5 | 100 |
| Theoretical plates ..... | ... | 12.5 | 10 | 10 | 8 |
| Per cent lost for abs. factor ..... | 1.2 | 1.9 | 3.1 | 3.1 | 4.8 |
| Per cent lost for abs. factor ..... | 0.8 | 21.0 | 21.9 | 21.9 | 23.1 |

These simple examples are considered sufficient to justify the statement that a 16-plate absorber of moderate plate efficiency will in general give a better performance than more elaborate absorbers having a lower number of plates. For that reason and because of the difficulty in actually determining the plate efficiency, it will be to the advantage of the plant operator to insist on a minimum of 16 plates irrespective of absorber design. In exceptional cases, where complete extraction of butanes is desired, it may be economical to use even a larger number of plates.

All further discussion will be based, therefore, on a "standard" absorber, assumed to have 16 plates of 75 per cent plate efficiency, or equivalent to 12 theo-

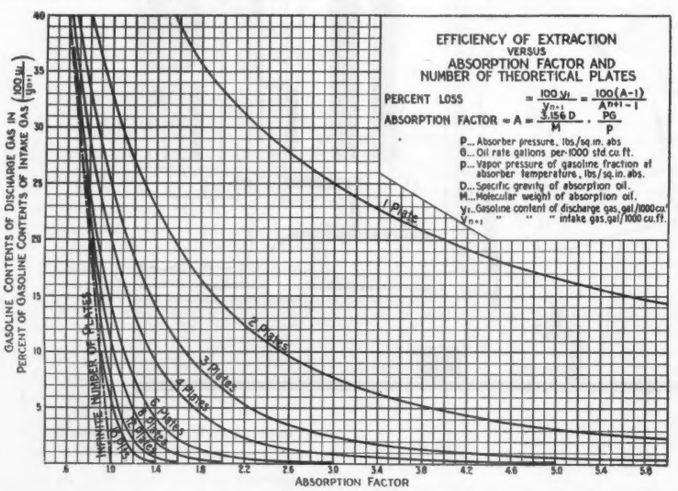


*Diagram 1.*

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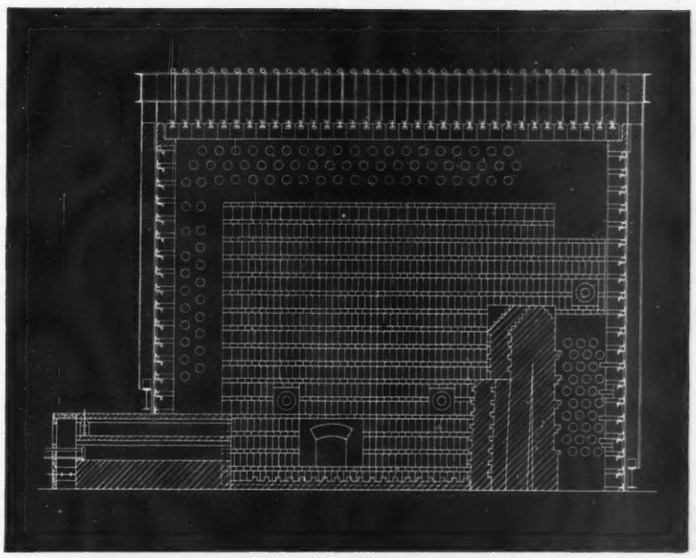

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retical plates. Extraction of any constituent in such an absorber will be 99 per cent complete if the absorber is operated with an absorption factor of 1.30.

(c) Physical Properties of Absorption Oil.—The absorption factor has been defined by equation (10) as:

$$A = 3.156 \frac{D}{M} \frac{PG}{p}$$

This formula contains the ratio $\frac{D}{M}$, that is, the density of the absorption oil to its molecular weight. Typical values of this ratio for oils of different gravity are as follows:

| | | | | | |
|---|---|---|---|---|---|
| A.P.I. gravity of absorption oil | 32° | 34° | 36° | 38° | 40° |
| Specific gravity, D | 0.865 | 0.855 | 0.845 | 0.835 | 0.825 |
| Molecular weight, M | 192 | 182 | 173 | 164 | 155 |
| $\frac{100\ D}{M}$ | 0.450 | 0.466 | 0.488 | 0 508 | 0.532 |

From this table it will be apparent that the absorption factor is increased approximately 2 per cent for every 1° increase of gravity. The lighter oil will lend itself also to better atomization in the absorber, an effect which will tend to increase the apparent plate efficiency of the absorber.

It will be to advantage, therefore, to use a relatively light oil. It must be remembered, however, that stripping is a phenomenon opposite to that of absorption. The lighter the oil the more difficult it will be to strip it, the more efficient will have to be the stripping equipment, and the higher will, other things equal, be the steam consumption. Only plants equipped with modern stripping equipment will, therefore, derive any benefit from light oil. Other plants will use to advantage a heavier oil, because it is possible to compensate for its lower absorption efficiency by an increased oil rate, while no remedy can be had against losses due to imperfect stripping of the lean oil.

By introducing the $\frac{D}{M}$ the value corresponding to a 38° gravity oil, the formula for the absorption is reduced to the simple form:

$$A = 0.016 \frac{PG}{p} \qquad (25)$$

(d) Effect of Temperature.—The absorption factor depends on the vapor pressure of the gasoline constituents. The effect of temperature can be illustrated, therefore, by tabulating the vapor pressures of isopentane and normal butane for the operating range, that is, between 60° F. and 100° F.

VAPOR PRESSURES OF ISOPENTANE AND NORMAL BUTANE

| Temp. °F. | Isopentane: Lbs. per sq. in. | Isopentane: Per cent increase per 10° F. | Normal butane: Lbs. per sq. in. | Normal butane: Per cent increase per 10° F. |
|---|---|---|---|---|
| 60 | 9.6 | 22 | 25.9 | 19 |
| 70 | 11.7 | 22 | 31.2 | 19 |
| 80 | 14.1 | 21 | 37.0 | 19 |
| 90 | 17.0 | 21 | 44.1 | 19 |
| 100 | 20.3 | 20 | 51.9 | 19 |

The vapor pressure of isopentane increases approximately 21 per cent, that of normal butane about 19 per cent for every 10° rise of temperature. Since the absorption factor is inversely proportionate to vapor pressure, it follows that the absorption factor is decreased 2 per cent by every 1° rise of temperature. This is a very important statement. There are probably many plants in which the lean oil temperature could be reduced at least 10° F. by more adequate cooling facilities. The result would be a 20 per cent increase of absorption factor with a corresponding increase of extraction efficiency. If the extraction is adequate, the oil rate could be reduced 20 per cent with a corresponding reduction of load on pumps, heat exchangers, stills, boilers, condensers, etc., and, therefore, ultimate load on cooling towers. There is hardly any simple improvement in plant operation which has such a beneficial effect on the whole plant performance as a relatively small decrease in the temperature of the absorption oil. Proper design, maintenance and operation of the cooling towers deserves, therefore, the most careful attention. It is one of the most effective methods of providing additional capacity in overloaded plants.

(e) Effect of Oil Rate and Absorber Pressure.—The absorption factor is directly proportional to both oil rate, expressed in gallons per 1,000 cubic feet, and to the absolute absorber pressure. The same absorption factor can be obtained, therefore, by any desired combination of pressure and oil rate. By doubling the pressure, the oil rate may be cut into half, etc.

This statement is not exactly true. If the absorption factor is doubled, by increase of pressure alone, the oil rate would cause a corresponding increase of temperature at the bottom of the absorber, which in turn would cause a slight decrease of absorption factor as discussed above.

On the other hand, doubling the absorption factor by maintaining the pressure, but doubling the oil rate, would have the opposite effect on temperature and therefore give a somewhat higher absorption factor than indicated by direct proportions.

It should be remembered, therefore, that allowance must be made for the effect of temperature on the absorption factor, if changes in pressure or oil rate affect the saturation and, therefore, indirectly the absorber temperature. With high pressure plants or very rich gases it may be economical to resort to intercooling of the oil in the absorber to obtain the full benefit of the pressure and oil rate maintained in the plant; in other words, to counteract the large decrease of absorption factor caused by an abnormal temperature rise in the absorber.

(f) The Absorption of Different Gasoline Constituents.—The absorption of each gasoline constituent is substantially independent of the absorption of all other constituents. Each will depend on the value of the absorption factor, computed for the particular constituent. Since the vapor pressure is the only physical property affecting the absorption factor, and as the vapor pressures of different constituents differ widely from each other, it follows that the absorption factors for butane, pentane, etc., in any plant operated at a definite pressure, oil rate, temperature, etc., will be inversely proportional to the vapor pressures of these constituents. For that reason the vapor pressure data of the most important gasoline constituents are listed in the following table. They are expressed both by their absolute values,[1] and by a ratio vapor pressure of butane to vapor pressure of given fraction at the same temperature. This ratio defines at the same time the ratio of absorption factors under any given set of operating conditions.

[1]Taken from diagram: "Vapor Pressures of Hydrocarbons," for the Natural Gasoline Association of America by G. G. Brown, H. B. Coats, P. A. Badger, Engineering Research Department, University of Michigan. April, 1928.

VAPOR PRESSURE DATA

| Temp. °F. | Propane: Lbs. per sq. in. | Propane: Ratio | Isobutane: Lbs. per sq. in. | Isobutane: Ratio | Normal butane: Lbs. per sq. in. | Normal butane: Ratio | Isopentane: Lbs. per sq. in. | Isopentane: Ratio | Pentane: Lbs. per sq. in. | Pentane: Ratio | Hexane: Lbs. per sq. in. | Hexane: Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 91 | 0.23 | 32.6 | 0.66 | 21.3 | 1.00 | 7.6 | 2.8 | 5.4 | 3.9 | 1.5 | 14.2 |
| 60 | 106 | 0.24 | 39.0 | 0.67 | 25.9 | 1.00 | 9.6 | 2.7 | 6.8 | 3.8 | 1.9 | 13.5 |
| 70 | 123 | 0.25 | 46.4 | 0.67 | 31.2 | 1.00 | 11.7 | 2.7 | 8.4 | 3.7 | 2.5 | 12.6 |
| 80 | 141 | 0.26 | 54.3 | 0.68 | 37.0 | 1.00 | 14.1 | 2.6 | 10.3 | 3 6 | 3.1 | 11.9 |
| 90 | 163 | 0.27 | 63.5 | 0.69 | 44.1 | 1.00 | 17.0 | 2.6 | 12.7 | 3.5 | 3 9 | 11.3 |
| 100 | 186 | 0.28 | 73.6 | 0.70 | 51.9 | 1.00 | 20.3 | 2.5 | 15.3 | 3.4 | 4.9 | 10.6 |
| 110 | 211 | 0.29 | 85.3 | 0.71 | 61.0 | 1.00 | 24.1 | 2.5 | 18.4 | 3.3 | 6 0 | 10.1 |
| 120 | 238 | 0.30 | 97.8 | 0.72 | 70.5 | 1.00 | 28.5 | 2.5 | 21.8 | 3.2 | 7.4 | 9.5 |

From this table it will be evident that the absorption factor of any constituent may be expressed as a ratio of the butane factor. This ratio depends on the absorber temperature but does not vary appreciably with temperature. For general use it will be convenient if the following figures are committed to memory: The propane absorption factor will in general be one-fourth, that of isobutane two-thirds, and that of isopentane two and two-thirds times that of normal butane under the same operating conditions (¼, ⅔, 2⅔).

In an earlier part of the paper it has been shown that an absorption factor of 1.3 will be required to obtain with a "standard" (16-plate) absorber a 99 per cent extraction of any constituent.

To obtain efficient isopentane extraction it will be necessary, therefore, to operate the plant with an isopentane factor of 1.30, or a butane factor of 0.50. Since isopentane is unquestionably a desirable constituent, this will in general be the lowest butane factor at which a plant should be operated. Under these conditions about 50 per cent of the butane content of the rich gas would be extracted.

If a higher butane extraction were desired, for instance 80 per cent of the available butane, the butane factor would have to be raised to slightly above 0.8. In that case the isopentane factor would be about 2.1. It will be noted, by referring to Diagram 1, that in that case an absorber having eight theoretical plates would extract 99.7 per cent of the available isopentane, or be adequate. On the other hand the oil circulation, to obtain the desired butane extraction, would have to be raised only a few per cent if the number of theoretical plates were reduced from 12 to 8. This will serve as an example of conditions under which a smaller number of plates may be permissible. Even in this case, however, it could be shown that the small savings due to the larger number of plates will pay for the increased cost of the absorber.

If complete butane extraction is desired, the butane factor has to be raised to about 1.3. The isobutane factor in that case would be about 0.85, or about 15 per cent of the available isobutane would be lost. For complete extraction of isobutane, the butane factor would have to be raised to nearly 2.0.

The value of the butane factor of correctly designed plant should lie, therefore, between the extremes of 0.5 and 2.0, and in average practice between 0.60 and 1.30, depending on the desired volatility of the finished gasoline.

Since the propane factor is about one-quarter of the butane factor it will lie as a rule between 0.15 and 0.30 or 15 to 30 per cent of the available propane will be extracted in the absorber.

(g) Miscellaneous Details.—Due to the dependence of the absorption factor on temperature, it is important that the correct temperature be used in the computations. It can be shown that in all cases, where the absorption factor is below unity, the equilibrium at the bottom of the absorber will control. With large factors the top temperature will be more significant. To insure conservative practice it is recommended, however, that the temperature of the oil leaving the absorber be used for routine computations.

The oil rate G is expressed in gallons per 1,000 cubic feet. It should be computed, of course, from the volume of gas entering the absorber, that is, the rich gas plus any plant vapors that may be recirculated to absorber intake. Allowance could be made also for the enrichment of the oil in computing the oil rate. This is a refinement, however, that may be neglected in average practice.

Summing up, the best procedure will be to compute the absorption factor from the liquid rate, gas rate and temperature prevailing at the bottom of the absorber. Any error introduced thereby will be in the direction of conservative practice, that is, will insure operating conditions which will result in somewhat more efficient extraction than the computations would indicate. In exceptional cases it may be desirable, however, to compute the factor both for the bottom and top of the absorber, to determine the limits between which results may be expected to vary. This applies only to plants in which the enrichment of the oil is high, such as vapor recovery plants or high pressure plants.

**2. Effect of Gasoline Content of Lean Oil**

The analysis so far has been based on the assumption that the lean oil entering the absorber is perfectly stripped, that is, contains no gasoline fractions. This condition is rarely fulfilled. The effect of the gasoline content of the lean oil on extraction is defined by the second term in equation 18 and may be written:

$$\frac{100\ y_1}{y_0} = \frac{100(A^n - 1)A}{A^{n+1} - 1} \qquad (25)$$

$y_1$ is the gasoline content of the discharge gas; $y_0$ the gasoline content of a gas in equilibrium with the lean oil containing $x_0$ per cent of gasoline. A is the absorption factor, n the number of theoretical plates.

The relations defined by equation (25) are shown in graphical form in Diagram 2. It will be noted that the gasoline content of the discharge gas approaches equilibrium with the lean oil, as the number of plates and the absorption factor are increased. For absorption factors above 1 and 12 plates equilibrium is fully established, that is $y_1 = y_o$.

With reasonably efficient strippers, the lean oil should be substantially free of butane. Its gasoline content should, therefore, consist of fractions for which the above conditions for equilibrium, that is, absorption factor above unity, are fulfilled. It may, therefore, be concluded that the gasoline content of the lean gas due to imperfect stripping of the oil corresponds to the equilibrium content computed from the gasoline content of the lean oil.

This equilibrium content may be computed from equation (4):

$$\frac{y_1 vP}{1000} = \frac{rx_0 p}{100} \qquad (4)$$

The right hand member of this equation represents the vapor pressure $p_0$ of the lean oil due to any one constituent. This relationship may be applied to different constituents as follows:

$$\text{Pentane } y_{1\,pent} = \frac{1000}{P} \frac{p_{0\,pent}}{v_{pent}}$$

$$\text{Hexane } y_{1\,hex} = \frac{1000}{P} \frac{p_{0\,hex}}{v_{hex}}$$

No great error will be introduced if an average value of 27.5 is substituted for $v_{pent}$, $v_{hex}$, etc., the vapor volume per gallon. In that case the summation of the terms on the lefthand side will give the total gasoline content $y_1 = y_{1\,pent} + y_{1\,hex} + \ldots\ldots$ of the lean gas, due to the total vapor pressure $p_0 = p_{0\,pent} + p_{0\,hex} + \ldots\ldots$ of the lean oil, or

$$y_1 = \frac{1000}{27.5P} p_0 \qquad (26)$$

For general practice it will be preferable to express the vapor pressure of the lean oil in mm. of mercury, in which case equation (26) may be written.

$$y_1 = 0.7 \frac{h_0}{P} \qquad (27)$$

$y_1$ is the gasoline content in gallons

(Continued on Page 178)

## WILDCAT OPERATIONS IN KANSAS

(Continued from Page 60)

**ELLIS COUNTY**

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w ..... Drlg. 1,460 ft.
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w.. Shut down 1,290 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w..... Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Drlg. 3,340 ft.

**FORD COUNTY**

McNabb et al's No. 1 Fowler, C SE Sec. 26-27-22w..... Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w..... Drlg. 2,250 ft.

**GOVE COUNTY**

Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w ..... Rig.

**GRAHAM COUNTY**

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w. Shut down 4,340 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w.. Drlg. 2,250 ft.

**GRANT COUNTY**

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w.. Rig.

**GREENWOOD COUNTY**

C. L. Mahan's No. 1 Binns, SE NW Sec. 23-27-11..... Drlg. 775 ft.
John Harwood's No. 1 Good, C SW NW NE Sec. 36-25-9 ..... Drlg. 2,015 ft.
Mallory's No. 1 Denchfield, SE NW Sec. 12-27-9..... Shut down 660 ft.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 ..... Shut down 50 ft.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12... Drlg. 1,820 ft.

**HARPER COUNTY**

Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w..... Shut down 1,830 ft.

**HARVEY COUNTY**

Gypsy Oil Co.'s No. 1 Hege, SE NW SE Sec. 13-22-2w.... Drlg. 2,490 ft.
Gypsy Oil Co.'s No. 1 Shine, SE SW Sec. 26-22-3w..... Drlg. 3,440 ft.

**KIOWA COUNTY**

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w..... Spudding.
McKenna et al's No. 1 Ralson, C NE Sec. 14-28-20w..... Rig.

**LINN COUNTY**

Ferguson & Hiatt's No. 1 Carple, NE SE SW Sec. 22-21-22 ..... Rig.

**LYONS COUNTY**

Aladdin & Phillips' No. 1 Ratcliff, SW cor. Sec. 29-20-10. Drlg. 2,390 ft.

**MARION CONTY**

Empire Oil & Ref. Co.'s No. 1 Hiebert, SE SW SE Sec. 20-20-2 ..... Rig on ground.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5..... Rig.

**MARSHALL COUNTY**

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 ..... Shut down 1,000 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 ..... Rig.

**McPHERSON COUNTY**

Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w ..... Rig.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w..... Drlg. 2,885 ft.

**MIAMI COUNTY**

Clark's No. 1 Vaughn, SE SW Sec. 28-17-22w..... Drlg. 750 ft.

**MORTON COUNTY**

Argus Prod. Co.'s No. 1 Dreibelbia, C NE Sec. 9-34-39w.. Location.
Argus Prod. Co.'s No. 1 Morgan, C NW Sec. 8-33-39w .... Location.
Argus Prod. Co.'s No. 1 Hayward, C NW Sec. 31-33-39w.. Rig.
Argus Prod. Co.'s No. 1 Little, C SE Sec. 24-34-40w..... Rig.
Argus Prod. Co.'s No. 1 Watson, C NE Sec. 27-34-40w..... Location.
Argus Prod. Co.'s No. 1 Mangle, C SW Sec. 6-34-39w..... Rig.
Argus Prod. Co.'s No. 1 Thompson, C SW, Sec. 7-34-39w. Rig.
Argus Prod. Co.'s No. 1 Rolla State Bank, C NW Sec. 8-34-39w ..... Location.
Argus Prod. Co.'s No. 1 Hayward, C SW Sec. 9-34-39w... Rig.
Argus Prod. Co.'s No. 1 Thompson, C NW Sec. 18-34-39w.. Location.
Argus Prod. Co.'s No. 1 Darth, C NE Sec. 20-34-39w..... Location.
Argus Prod. Co.'s No. 1 Haws, C SW Sec. 31-32-39w..... Location.
Argus Prod. Co.'s No. 2 Armstrong, C SW Sec. 4-34-39w.. Spudding.
Argus Prod. Co.'s No. 1 Hayward, C SW Sec. 9-34-39w.... Location.
Argus Prod. Co.'s No. 1 Dixon, C SE Sec. 18-34-39w .... Drlg. 800 ft.
Argus Prod. Co.'s No. 1 Chambers, C NW Sec. 25-33-40w. Rig.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w ..... Fishing 100 ft.
Argus Prod. Co.'s No. 1 Low, C SE Sec. 16-33-40w..... Rig on ground.

**MORRIS COUNTY**

Henderson et al's No. 1 Seisman, SW SE Sec. 24-16-9..... Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6..... Shut down 2,115 ft.

**NORTON COUNTY**

Richards et al's No. 1 Colby, Sec. 17-4-21w..... Abandoned.

**PAWNEE COUNTY**

Skelly Oil Co.'s No. 1 Milhouse, C SE Sec. 34-23-17w..... Drlg. 2,380 ft.

**PRATT COUNTY**

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ..... Drlg. 3,483 ft.

**RENO COUNTY**

United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w.. Rig on ground.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w ..... Drlg. 2,900 ft.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w..... Shut down 4,076-84 ft.; water.

**RICE COUNTY**

McPherson and Shell's No. 1 Jennings, NE SW NW Sec. 29-18-6w ..... Rig.
Miller & Brown's No. 1 Schartz, Sec. 14-20-10w..... Rig.
Hoffner, Lee & Shell's No. 1 Slad Farm Corp., C SW Sec. 33-19-6w ..... Rig.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w..... Shut down 50 ft.
Burgher's No. 1 Fair, C SE NE NE Sec. 14-21-10w..... Drlg. 4,000 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w..... Shut down 3,492-98 ft.; water.
McCulloch et al's No. 1 Williams, C NE Sec. 35-20-8w... Drlg. 2,790 ft.

**RILEY COUNTY**

Grey et al's No. 1 Smith, NE SE Sec. 30-6-6..... Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e... Shut down 2,245 ft.

**ROOKS COUNTY**

A. H. Kruger's No. 1 Steis, NW SE SW Sec. 12-9-16w ... Shut down 570 ft.

**RUSH COUNTY**

Syndicate Oil Co.'s No. 1 Mohr, C SW Sec. 2-18-16w .... Rig on ground.
Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w ..... Total depth 3,606 ft; shut down.

**RUSSELL COUNTY**

Empire and Prairie's No. 2 Ochs, SE NE Sec. 23-15-14w.. Location.
Austin Drlg. Co.'s No. 1 Rochfellow SE cor. Sec. 6-13-12w. Shut down 425 ft.
Imo O. & G. Co.'s No. 1 Wambley, SE NW NE Sec. 7-14-14w ..... Drlg. 1,320 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w..... Shut down 1,010 ft.

**SEDGWICK COUNTY**

T. C. Johnson's No. 1 Petrie, SW SE Sec. 35-26-1w..... Drlg. 3,438 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w ..... Shut down 975 ft.

**SALINE COUNTY**

Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW Sec. 20-13-4w ..... Drlg. 1,000 ft.
Dixie Oil Co.'s No. 1 Miller, NE SE SE Sec. 9-16-3w..... Drlg. 1,035 ft.

**SHAWNEE COUNTY**

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 ..... Shut down 985 ft.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 8-12-14 ..... Drlg. 2,150 ft.

**SHERIDAN COUNTY**

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w ..... Spudded; shut down.

**STAFFORD COUNTY**

Boucher Oil's No. 1 Christenson, NW cor. Sec. 22-22-11w. Drlg. 840 ft.
Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w..... Drlg. 1,948 ft.
Midwest's No. 36 Richardson, SE cor. Sec. 36-22-12w..... Drlg. 185 ft.
Gibson's No. 1 Mueller, C SW Sec. 11-23-14w..... Water 4,008-10 ft.; drlg. 4,284 ft.

**STEVENS COUNTY**

Agate Oil Co.'s No. 1 Gregory, NW SE Sec. 19-33-38w .... Rig.
Argus Prod. Co.'s No. 1 Libon, C NE Sec. 2-34-39w ..... Location.
Argus Prod. Co.'s No. 3 Armstrong, C SE Sec. 3-34-39w... Spudding.
Argus Prod. Co.'s No. 1 Roach, C NE Sec. 34-32-38w..... Rig.
Argus Prod. Co.'s No. 1 Asher, C NW Sec. 7-35-37w..... Rig.
Argus Prod. Co.'s No. 1 Barrow, C SW Sec. 32-34-38w.... Drlg. 1,000 ft.
Argus Prod. Co.'s No. 1 Hicks, C SE Sec. 12-34-39w..... Drlg. 2,536 ft.
Argus Prod. Co.'s No. 1 Bride, C SW Sec. 25-33-37w..... Drlg. 2,585 ft.
Argus Prod. Co.'s No. 1 Cross, C SE Sec. 19-32-37w..... Drlg. 2,600 ft.
Argus Prod. Co.'s No. 1 Porter, C SE Sec. 21-32-37w..... Drlg. 1,670 ft.
Argus Gas Co.'s No. 1 Christopher, C SW Sec. 11-33-39w.. Drlg. 2,595 ft.
Argus Oil Co's No. 1 Parker, C SW Sec. 19-34-36w..... Drlg. 2,735 ft.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w ..... Spudding; shut down.
McNabb et al's No. 1 Ramey, C SW Sec. 1-33-38w..... Drlg. 2,786 ft., 8,000,000 ft. gas.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ..... Shut down 1,600 ft.

**SUMNER COUNTY**

Hatfield's No. 1 Dauber, NE cor. Sec. 18-30-1w..... Shut down 50 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w..... Chat 3,651 ft.; drilled to 3,668 ft.; drlg. deeper to Wilcox at 4,070-85 ft.; landing casing; Silicious lime 4,110-14 ft.; water; total depth 4,163 ft.; plugged back to 3,670 ft. making 130 bbls. a day.
E. K. Carey and Laredo Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e ..... Wilcox 4,003 ft.; shut down 4,-236 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

**TREGO COUNTY**

Dixie and Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w ..... Drlg. 4,230 ft.
Day et al's No. 1 Guyler, SW NE NE Sec. 36-12-21w..... Shut down 50 ft.

## WILDCAT OPERATIONS IN NEBRASKA

**FRANKLIN COUNTY**

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w ..... Rig.

**CHASE COUNTY**

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w..... U.R. 5-in. csg.; T.D. 4,265 ft.

**FURNAS COUNTY**

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w ..... Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w.. Shut down 3,250 ft.

**PHELPS COUNTY**

Trees Oil's No. 1 Bergan, Sec. 22-6-19w..... Rig on ground.

**RICHARDSON COUNTY**

Norton et al's No. 1 Albin, NE cor. Sec. 26-1-14 ..... 10-in. csg. 1,600 ft.

**ROCK COUNTY**

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w ..... Drlg. 900 ft.

**WEBSTER COUNTY**

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w..... Shut down 555 ft.

## WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 68)

**CATAHOULA PARISH**

National O. & G. Co.'s No. 1 Kirkland, 585 ft. E, 495 ft. N, SW cor., Sec. 35-9-1n ..... Began drlg. May 10; cmtd. 10-in. 160 ft.

**CLAIBORNE PARISH**

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7 ..... S.D. 2,340 ft.
Leue Oil Co.'s No. 1 Taylor, 1,153 ft. S, 360 ft. W, C. Sec. 16-22-6 ..... S.D. 2,884 ft.
Triangle Drlg. Co.'s No. 2 Caskey, 660 ft. N, 660 ft. W, SE cor., Sec. 6-19-5 ..... Cmtd. 12½-in. 611 ft.; drlg. 1,100 ft.

**CONCORDIA PARISH**

A. C. Glassell's No. 1 Pittsfield Plantation, N 9°, E 1,320 ft., SW cor., Sec. 41-8-10 ..... D.S. test 895 ft.; show gas; drlg.
Joe Man et al's No. 1 Maxwell, C, Sec. 35-3n-8e ..... Drlg. sandy shale 2,790 ft.

**DE SOTO PARISH**

Benson Oil Co.'s No. 1 Harris, Sec. 6-10-13 ..... Tested dry; show gas; W.O. & 650 ft.
Odell & Lawton's (was L. A. Crump's) No. 1 Harris, 300 ft. N, 300 ft. E, SW cor. NW SE, Sec. 11-13-14.. O.W.D.D.; derrick; T.D. 3,140 ft.; D.S. stuck 700 ft.
Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11 ..... Began drlg. April 20; cmtd. 10-in. 130 ft.; S.D. 350 ft.
H. L. Hunt's No. 1 Furman, Sec. 5-14-13..... Rig up.
R. O. Roy's No. 1 Nelson, 660 ft. S, 660 ft. E, NW cor., Sec. 36-15-13 ..... Rig up.

**FRANKLIN PARISH**

Davis et al's No. 1 Moore, 600 ft. W, 200 ft. S, NE cor., Sec. 12-11-6 ..... S.D. 1,430 ft.
Evansville Inv. Co.'s No. 1 W. B. Welch, 945 ft. E, 511 ft. N, SW cor., Sec. 2-14-8 ..... Washing to bottom 4,200 ft.

**JACKSON PARISH**

El Dorado Chief O. & G. Co.'s No. 1 Sou. Advance Paper Bag Co., 225 ft. N, 275 ft. E, SW cor. SW NE, Sec. 35-15-4 ..... Rig up.

**LINCOLN PARISH**

Ark. Fuel Oil Co.'s No. 1 Lewis & Co., 300 ft. N, 300 ft. W, SE cor. NW SE, Sec. 26-20-4 ..... Location.

**NATCHITOCHES PARISH**

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... Began drlg. May 3; cmtd. 12½-in. 150 ft.; S.D. for title work.
S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 33-5-4 ..... Tested 1,000,000 ft. gas and S.W. 3 ft.; S.D. for orders; T.D. 2,-526 ft.
Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 848 ft. E, SW cor. SE, Sec. 7-8-9 ..... S.D. 1,600 ft.

**RAPIDES PARISH**

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... S.D. for fuel 2,650 ft.

**RED RIVER PARISH**

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10 ..... Tested S.W. and show oil 6 ft. sand 1,700 ft.; W.O.
E. C. Lucas' No. 1 La. Pecan Co., Sec. 26-13-11..... Cmtd. 12-in. 40 ft.; drlg. 400 ft.

**RICHLAND PARISH**

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5 ..... Derrick.
Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6 ..... Waiting orders; T.D. 3,857 ft.
Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W; W.O. 2,477 ft.
Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6 ..... Location.
Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.

W. C. Feazel's No. 1 Landrum, 630 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7 ..... Derrick.

**SABINE PARISH**

Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E. C, NE, Sec. 31-9-13 ..... Rig up.
Loring Oil Co.'s No. 1 Peavy-Wilson Lbr. Co., 200 ft. S, 330 ft. W, NE cor. SW NE, Sec. 21-6-13 ..... Coring 1,620 ft.
Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ..... Derrick.
J. C. McDaniel & Lieber's No. 1 Batson, 675 ft. N, 315 ft. E, SW cor. SE, Sec. 16-15-13 ..... Drlg. 2,209 ft.
Ohio Oil Co.'s No. 1 Acct. 2, Bowman-Hicks, 275 ft. N, 330 ft. W, SE cor. NE SE, Sec. 6-7-13 ..... Bailed dry 2,450 ft.; drlg.
Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-13 ..... S.D. 1,656 ft.
Pelican O. & G. Co.'s No. 1 La. Long Leaf Lbr. Co., 215 ft. N, 30 ft. E, SW cor. NW SE, Sec. 4-7-11 ..... 150 ft. oil in hole; T.D. 3,436 ft; C.O.
Pelican O. & G. Co.'s No. 2 La. Long Leaf Lbr. Co., C NE, Sec. 20-7-12 ..... Drlg. 1,428 ft.
Pelican O. & G. Co.'s No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NE SW, Sec. 1-7-12 ..... Tested S.W. 2,533 ft.; plugging back to 6⅝-in. seat 2,288 ft.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-13 ..... S.D. 2,590 ft.
San Miguel Oil Corp.'s No. 1 Blankenship, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 20-9-11 ..... Derrick.
Tetco Oil Corp.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-13 ..... Cmtd. 12½-in. 170 ft.

**TENSAS PARISH**

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-13 ..... Drlg. 1,760 ft.

**UNION PARISH**

Fred Stovall's No. 1 Stovall, 1,320 ft. E, 350 ft. N, SW cor., Sec. 32-23-4 ..... Rig up.

**WEBSTER PARISH**

J. J. Kean's No. 1 Monsingo (was F. M. Fuller's), 200 ft. N, 200 ft. W, SE cor., Sec. 17-18-8 ..... Rebuilding derrick; T.D. 1,698 ft.

**ARKANSAS**

**ASHLEY COUNTY**

J. D. Marcum Co.'s No. 1 McGarry, 300 ft. W, 100 ft. S, C, Sec. 10-19-4 ..... O.W.D.D; arranging to deepen; T.D. 3,300 ft.

**CALHOUN COUNTY**

Tidal Oil Co.'s No. 1 Freeman-Smith Lbr. Co., 150 ft. C, S line, NE NW, Sec. 3-16-14 ..... Rig up.

**CLEBURNE COUNTY**

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10 ..... 1,200 ft. S.W. in hole; S.D.; W.O.; T.D. 3,050 ft.
Donnelly-Craver et al's No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Drlg. 840 ft.

**COLUMBIA COUNTY**

Parker et al's No. 1 Franks, 330 ft. S, 330 ft. W, C, Sec. 25-19-22 ..... S.D. 2,835 ft.

**DREW COUNTY**

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-5 ..... Fishing D.S.; T.D. 2,625 ft.

**FRANKLIN COUNTY**

Red Bank Oil Co.'s No. 1 Edtin, SW cor., Sec. 33-10-26 ..... Drlg. hard sand 643 ft.

**GARLAND COUNTY**

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... S.D; W.O. 3,604 ft.

**LITTLE RIVER COUNTY**

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-13-32 ..... Coring sandy lime 2,376 ft.
McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE, Sec. 12-13-28 ..... Arranging to set 6⅝-in; T.D. 3,180 ft.

**LOGAN COUNTY**

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... O.W.D.D; comp. 3,610 ft; U.R. 5 3/16-in. 3,510 ft.; T.D. 3,610 ft.
M. W. Greeson's No. 1 C. S. Parke, 330 ft. N, 330 ft. W, SE cor., Sec. 21-8-24 ..... Cmtd. 6-in. 950 ft; drlg. broken shale 1,325 ft.

**MADISON COUNTY**

J. W. Baxter's No. 1 Hallem, C NE SW, Sec. 17-16-26 ..... Location.

**OUACHITA COUNTY**

Anderson & Wimmer's No. 1 Buck, Sec. 7-15-17 ..... Fishing 1 jt. D.S.; T.D. 2,375 ft.

**PIKE COUNTY**

Theo. Davis, trustee's No. 1 Ruth Wilson, 200 ft. S, 200 ft. W, NE cor., Sec. 25-5-26 ..... Fishing 700 ft; S.O.

**POPE COUNTY**

Ark.-La. P. L. Co.'s No. 1 Crotts, 660 ft. S, 660 ft. W, NE cor. SW NE, Sec. 16-9-21 ..... Cmtd. 7-in. 1,256 ft.
Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-19 ..... Drlg. lime 4,037 ft.

**SCOTT COUNTY**

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... Fishing cable tools; T.D. 1,420 ft.

**SEBASTIAN COUNTY**

M. W. Greeson's No. 1 Spears, Sec. 9-7-29 ..... Derrick.
Lavaca O. & G. Co.'s No. 9 Cason, Sec. 21-8-30 ..... Derrick.
Lavaca O. & G. Co.'s No. 1 Southland, Sec. 28-8-30 ..... Drlg. 2,650 ft.
O. W. Estes' No. 1 Telford, 320 ft. S, 320 ft. E, NW cor. SW, Sec. 35-17-14 ..... Reported S.W., abandoned 2,674 ft. Mar. 19, 1930.

**ST FRANCIS COUNTY**

Brownlee Drlg. Co.'s No. 1 Whitted, 110 ft. N, 110 ft. E, SW cor. SE NW, Sec. 28-4-1 ..... Drlg. 2,393 ft.

**UNION COUNTY**

Ark. Nat. Gas Corp.'s No. 1 Burns, 330 ft. E, 400 ft. N, SW cor. NE NW, Sec. 14-18-17 ..... Began drlg. May 12; drlg.
Carter et al's No. 1 Burnside, 320 ft. W, 150 ft. S, NE cor. SE NE, Sec. 13-18-14 ..... Began drlg. May 11; cmtd. 10-in. 109 ft.
S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... Began drlg. Apr. 25; cmtd. 10-in. 100 ft.
H. L. Hunt's No. 1 Trummell, 240 ft. S, 330 ft. E, NW cor. SW NW, Sec. 28-18-13 ..... Cmtd. 12½-in. 208 ft.; drlg. 1,950 ft.
Lion Oil Ref. Co.'s No. 1 Ballard, 350 ft. N, 320 ft. W, SE cor. SW NW, Sec. 10-18-13 ..... Cored S.W. sand 4,487 ft.
Marine Oil Co.'s No. 2 Simmons, 300 ft. N, 300 ft. E, SW cor. SE NW, Sec. 10-18-13 ..... Rig up.
Marine Oil Co.'s No. 2-B Winn, 330 ft. S, 330 ft. W, NE cor., Sec. 10-18-13 ..... Began drlg. May 5; cmtd. 12½-in. 308 ft.; drlg. 1,502 ft.
Mediaette Drlg. Co.'s No. 4 Union Sawmill, 300 ft. W, 300 ft. N, SE cor., Sec. 14-18-14 ..... Location.
J. W. Olvey's No. 1 G. G. Simmons, 288 ft. S, 288 ft. W, NE cor. NE NW, Sec. 15-18-13 ..... Cored S.W. sand 3,547 ft.; S.D. repairs.
Simms Oil Co.'s No. 1 G. G. Simmons, 200 ft. S, 200 ft. W, NE cor. SW, Sec. 10-18-13 ..... Cmtd. 8¼-in. 3,521 ft.; 1 ft. sand 3,526-27 ft.
Southern Crude O. P. Co.'s No. 1 Oliver, 330 ft. N, 330 ft. W, SE cor. NW NE, Sec. 11-18-13 ..... Top Nacatoch 2,208 ft.; csg. 2,242 ft.
South El Dorado Oil Co.'s No. 1 Traylor, 330 ft. N, 135 ft. W, SE cor. NW NE, Sec. 9-19-15 ..... Cmtd. 10-in. 93 ft.

**VAN BUREN COUNTY**

Glenn Cole et al, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

**WASHINGTON COUNTY**

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D; W.O. 602 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Trying to kill wtr. flow 3,150 ft; hard sand showing oil 1,637-40 ft

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-33 ..... U.R. 8-in. to T.D. 1,500 ft.

**WHITE COUNTY**

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8 ..... Pulled 5 3/16-in; S.D; W.O; T.D. 3,650 ft.

**YELL COUNTY**

Tegmeir & Luckett's No. 1 Falcon, Sec. 36-1-21 ..... Recmtd. 6⅝-in. 3,577 ft.; C.D.

**EAST TEXAS**

**BOWIE COUNTY**

Lee Timberlake's No. 1 Tidwell, 2,800 ft. N, 300 ft. W, SE cor., Jos. Eskell Sur. ..... Derrick.

**CAMP COUNTY**

Rogers et al's No. 1 Enfelt, R. M. Montgomery Sur. ..... Tested dry 1,870 ft; S.D. 1,930 ft.

**MARION COUNTY**

H. L. Hunt's (was R. E. Davidson's) No. 1 Susie Chapman, Jackson-Grayson Sur. ..... Drlg. 3,190 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... Derrick pattern.

**RED RIVER COUNTY**

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,865 ft.
Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. .... S.D. 1,862 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... S.D. 2,183 ft.

**SHELBY COUNTY**

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 1 McCann, D. G. Green Sur. ..... Reaming 4,132 ft.
Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur. .. S.D. fuel; T.D. 3,300 ft.

**MISSISSIPPI**

**ALCORN COUNTY**

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e .. Fishing 6-in. and tools 3,393 ft; T.D. 3,735 ft.

**CHICKASAW COUNTY**

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 26-13-3 ..... Driving 8¼-in. 1,400 ft.

**HINDS COUNTY**

Oscar Brown's No. 1 Riverside (formerly Hennessee et al's), SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.
Cane River Oil Co.'s No. 1 Lufkin, Sec. 15-6-1e ..... Derrick.
Dome Oil Co.'s No. 1 Elton, NE cor. NE SW, Sec. 5-4-1e. Claim oil sand 818-34 ft; arranging to cmt. 9-in. 818 ft.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e ..... Derrick.
Jackson O. & G. Co.'s No. 1 Taylor, SE cor. SE, Sec. 35-6-1e .. Claim sand showing oil 2,910 ft; lost core; rmd. to 2,808 ft. for 6⅝-in.
La. G. & F. Co.'s No. 1 Harris, SE cor., Sec. 35-6-1e ..... Drlg. 2,780 ft.
Love O. & G. Co.'s No. 1 Bridges-Hilzim, 870 ft. N, 930 ft. W, SE cor., Sec. 35-6-1e ..... Began drlg. Apr. 28; W.O.
Love O. & G. Co.'s No. 1 Mendoza, Sec. 11-5-1e ..... Tested 7,000,000 ft. gas 2,444 ft; W.O.
Magnolia State Oil Co.'s No. 1 Brown, Sec. 19-6-1e ..... Derrick.
Progressive Oil Co.'s No. 1 Mayes, C NE NE, Sec. 2-5-1e. Derrick.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.
J. A. Weir et al's No. 1 Holliday & Ross, NW SE, Sec. 8-6-2e ..... Derrick.

**HUMPHREYS COUNTY**

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

**LAUDERDALE COUNTY**

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 3-7-16 ..... Cored hard sand 3,084-87 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... S.D; W.O; sandy shale 2,826 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14 ..... Derrick.

**LAFAYETTE COUNTY**

Banks-Goode et al's No. 1 May, 113½ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

**LINCOLN COUNTY**

Lincoln O. & G. Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6 ..... S.D; W.O. 2,221 ft.

**MONROE COUNTY**

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 2,912 ft; bailer lost in hole
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Shot 2,402-18 ft; small show oil; arranging to shoot 2,987-95 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

**RANKIN COUNTY**

Gulf Ref. Co.'s No. 1 Rainey, NW NW, Sec. 13-5-1e .... Coring 2,900 ft.
R. A. More et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e .. Drlg. 900 ft.
Interior Oil Co.'s No. 1 Moore, 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e ..... S.D. 900 ft.
Pearl River O. & G. Co.'s No. 1 Littlefield, SE NE, Sec. 12-5-1e ..... Derrick.

**WARREN COUNTY**

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15 ..... S.D. 2,475 ft; 2,350 ft. D.S. in hole; W.O.

**YALOBUSHA COUNTY**

Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, Sec. 14-11-4 ..... Cored hard sandy shale 3,434 ft, claim small show gas.

**YAZOO COUNTY**

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 ..... Drlg. sandy lime 5,183 ft.

**ALABAMA**

**LAMAR COUNTY**

Briggs & Knapp's No. 1 Wefel, Sec. 26-12-14 ..... T.A. 1,740 ft.

**LAUDERDALE COUNTY**

A. D. Morton et al's No. 10 O'Neal est., Sec. 8-2s-13w .. Cmtd. 13⅜-in. 125 ft; drlg. hard lime 905 ft.

**MARION COUNTY**

Hobson et al's No. 1 John Clark, SE, Sec. 29-11-14 ..... Derrick pattern.

**WASHINGTON COUNTY**

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; S.W. flow at 1,450 ft.
S.A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-8-2w .. Drlg. 700 ft.

## LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 68)

Askew & Goodman's No. 1 Roberson, 330 ft. S, 282 ft. W, NE cor. SW SW, Sec. 25-23-11 ..... Show oil and gas and S.W; T.D. 3,167 ft.; T.A. 3,280 ft.
E. W. Bateman's No. 1 Bollinger, 200 ft. S, 200 ft. E, NW cor., Sec. 28-23-11 ..... Cmtd. 6⅝-in. 3,080 ft.; T.D. 3,194 ft.
E. W. Bateman's No. 2 Bollinger, 200 ft. S, 200 ft. W, NE cor. Lot 29, Sec. 28-23-11 ..... Location.
Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor. Lot 17, in Lot 16, Sec. 31-23-11 ..... Full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.
Eylers O. & G. Co.'s No. 1 Wise, 330 ft. S, 330 ft. W, NE cor., Sec. 35-23-11 ..... 350 ft. oil; W.O.S.R.; T.D. 3,201 ft.
Greenwood Prod. Co.'s No. 1 Bollinger, 1,980 ft. N, 1,150 ft. E, SW cor. SE, Sec. 36-23-12 ..... 300 ft. oil; S.D; W.O. 3,200 ft.
H. L. Hunt's (was Love et al's) No. 1 Allen, SE cor. NE NE, Sec. 30-23-11 ..... W.O. 3,482 ft.
H. L. Hunt, Inc.'s No. 5 J. W. Peyton, 990 ft. W, 330 ft. S, NE cor. SE, Sec. 25-23-12 ..... Location.
H. L. Hunt, Inc.'s No. 7 J. W. Peyton, 990 ft. S, 990 ft. E, C, Sec. 25-23-12 ..... Location; reported drlg. in error.

H. L. Hunt, Inc.'s No. 8 J. W. Peyton, 990 ft. E, 330 ft. S, C, Sec. 35-23-12.....Location.
H. L. Hunt, Inc.'s No. 9 J. W. Peyton, 330 ft. S, 330 ft. E, C, Sec. 35-23-12.....W.O.S.R; 100 ft. oil; T.D. 3,222 ft.
H. L. Hunt, Inc.'s No. 10 J. W. Peyton, 990 ft. S, 330 ft. E, C, Sec. 35-23-12.....500 ft. fluid; W.O.S.R; 3,176 ft.
La. Pet. Co.'s No. 3 Bain, Sec. 31-23-11.....Swabbed dry; arranging to deepen; T.D. 3,271 ft.
Magnolia Pet. Co.'s No. 2 Matlock, 330 ft. S and W) NE cor. SE SW, Sec. 25-23-12.....Bailing to test small show oil; T.D. 3,188 ft.
Magnolia Pet. Co.'s No. 2 Roberson, 330 ft. S, 330 ft. E, NW cor. SW NE, Sec. 26-23-12.....Location.
Magnolia Pet. Co.'s No. 3 Matlock, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 25-23-12.....Drlg. 3,012 ft.
Magnolia Pet. Co.'s No. 1 Roberson, Sec. 26-23-12.....Missed D.S. test 3,131 ft.; plugged back to 2,950 ft.; shot formation 2,950 ft.; 1,600 ft. fluid; swabbing.
Nat. Drlg. & Prod. Co.'s (was Lide et als') No. 1 Matlock, 2,970 ft. S, 990 ft. E, NW cor., Sec. 26-23-12....Drlg. 2,660 ft.
Nat. Gas Prod. Co.'s No. 3 U. S. Govt., 1,520 ft. S, 2,580 ft. E, NW cor., Sec. 31-23-11.....Rig up.
Nat. Gas Prod. Co.'s No. 4 U. S. Govt., 2,440 ft. S, 2,580 ft. E, NW cor., Sec. 31-23-11.....Location.
The Texas Co.'s No. 1 Peyton, 660 ft. N, 330 ft. E, SW cor., Sec. 30-23-11.....O.W.D.D.; Comp. Feb. 19, 1928; 40,000,000 ft. gas; 2 ft. sand; T. D. 3,076 ft.; derrick.
The Texas Co.'s No. 2 Peyton, 990 ft. N, 330 ft. W, SE cor., Sec. 25-23-12.....W.O.S.R. 3,195 ft.
The Texas Co.'s No. 5 Peyton, 330 ft. N, 330 ft. W, SE cor., Sec. 25-23-12.....Derrick.
The Texas Co.'s No. 7 Peyton, 1,090 ft. N, 150 ft. E, The Texas Co.'s No. 1 Hy. Rose, 940 ft. E, 450 ft. N, C, Sec. 31-23-11.....O.W.D.D.; fishing for liner; T.D. 2,680 ft.
The Texas Co.'s No. 7 Wilkinson, 990 ft. N, 990 ft. E, C, Sec. 36-23-12.....Drlg. 3,134 ft.
The Texas Co.'s No. 8 Wilkinson, 990 ft. W, 330 ft. N, SE cor. NE, Sec. 36-23-12.....Began drlg. May 10; cmtd. 10-in. 382 ft.; drlg. 1,350 ft.
Tippett Drlg. Co.'s No. 2 Holmes, 990 ft. S, 330 ft. W, NE cor. NW, Sec. 36-23-12.....Cmtd. 6⅝-in. 3,140 ft.; sand 3,153-56 ft.
John Woodley et al's No. 2 L. & A., 990 ft. N, 990 ft. W, SE cor., Sec. 14-23-12.....Fishing for bailer 3,156 ft.
Woodley et al's No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 32-23-12.....Surface csg. collapsed; W.O; T.D. 1,500 ft.

**BOSSIER PARISH—SLIGO**

La. G. & F. Co.'s No. 5 Thigpen-Herold, 660 ft. S, 660 ft. E, NW cor., Sec. 13-17-12.....D.S. test 2,436 ft.; est. 10,000,000 ft. gas; cmtd. 6-in. 2,447 ft.
La. G. & F. Co.'s No. 6 Thigpen-Herold, 660 ft. S, 1,980 ft. E, NW cor., Sec. 13-17-12.....Derrick.

**CADDO PARISH—DIXIE**

D. C. Richardson's No. 1 Oden, 330 ft. S, 330 ft. W, C, Sec. 18-19-14.....Drlg. 2,600 ft.

**CADDO PARISH—GREENWOOD**

Ark.-La. P. L. Co.'s No. 1-B Brumble, 330 ft. S, 1,280 ft. E, NW cor., Sec. 18-16-16.....Arranging D.S. test 2,980 ft.
Calatex O. & G. Co.'s No. 2-A Agurs, 1,325 ft. S, 1,304 ft. E, NW cor., Sec. 7-16-16.....Tested S.W.; W.O. 2,735 ft.

**CADDO PARISH—MOORINGSPORT**

Falcon Oil Co.'s No. 3 Muslow, 1,220 ft. S, 1,070 ft. W, NE cor. SE, Sec. 29-20-15.....Drlg. 2,020 ft.
Falcon Oil Co.'s No. 4 Muslow, 200 ft. W, 1,270 ft. S, NE cor., Sec. 29-20-15.....Location.

**CADDO PARISH—OIL CITY**

Gulf Ref. Co.'s No. 37-A Levee Board, 2,005 ft. S, 200 ft. W, NE cor. NW, Sec. 34-21-16.....Cmtd. 6⅝-in. 1,800 ft.
Gulf Ref. Co.'s No. 38-A Levee Board, 210 ft. S, 200 ft. E, NW cor., Sec. 34-21-16.....Location.
P. T. Mize's No. 1-A La. Oil Ref. Corp., 662 ft. N, 175 ft. E, SW cor., Sec. 6-20-15.....Shot show gas; cleaning out; T.D. 1,475 ft.
Standard Oil Co.'s No. 19 J. J. Hart, 1,805 ft. E, 1,-130 ft. S, NW cor., Sec. 34-21-16.....Cmtd. 6-in. 1,795 ft.; W.O.S.R. 1,836 ft.
Shreveport Oil Corp.'s No. 5 Hicks, 880 ft. N, 960 ft. W, SE cor. NE NW, Sec. 32-21-15.....4½ ft. sand; W.O.S.R.; T.D. 2,116 ft.
The Texas Co.'s No. 2 Leonard Fee, 1,520 ft. W, 900 ft. S, NE cor., Sec. 29-20-15.....W.O.S.R. 2,353 ft.
The Texas Co.'s No. 3 Leonard Fee, 2,440 ft. W, 576 ft. S, NE cor., Sec. 29-20-15.....Derrick.
The Texas Co.'s No. 72 Levee Board, 735 ft. N, 210 ft. E, SW cor. SE, Sec. 27-21-6.....C.O; T.D. 1,852 ft.
The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16.....Location.

**CADDO—PINE ISLAND**

Tholl Oil Co.'s No. 12 Bashara, 300 ft. S, 100 ft. W, NE cor. NW, Sec. 32-21-15.....Cmtd. 10-in. 110 ft.; rmg. for 6-in. 2,000 ft.

**DE SOTO PARISH—KINGSTON**

Ark. Fuel Oil Co.'s No. 2 Scott, 330 ft. N, 330 ft. E, SW cor. SE NE, Sec. 32-14-13.....Began drlg. May 13; cmtd. 10-in. 90 ft.
Frank Melat, Inc.'s No. 1 Schryver, 175 ft. E, 175 ft. N, SW cor. NW SW, Sec. 35-14-13.....Cmtd. 10-in. 145 ft.; drlg. 450 ft.
R. O. Roy's No. 1 Brooks, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 8-13-13.....Derrick.
R. O. Roy's No. 1-D Farmer, 330 ft. N, 330 ft. E, SW cor. SE, Sec. 32-14-13.....Derrick.
R. O. Roy's No. 2 Jessie Fuller, 660 ft. S, 660 ft. E, NW cor. SE, Sec. 6-13-13.....Rig up.
R. O. Roy's No. 1-B Farmer, 660 ft. S, 660 ft. E, NE SW, Sec. 13-13-13.....Drlg. 1,500 ft.
R. O. Roy's No. 1 Mattie Fuller, 330 ft. S, 330 ft. W, NE cor. SE NW, Sec. 5-13-13.....Began drlg. May 11; cmtd. 10-in. 102 ft.
R. O. Roy's No. 1 Fuller & Conard, 330 ft. S, 330 ft. W, NE cor. SE, Sec. 6-13-13.....Began drlg. May 12; cmtd. 10-in. 140 ft.
R. O. Roy's No. 1 Lee, 660 ft. N, 660 ft. E, SW cor., Sec. 32-14-13.....Cmtd. 6⅝-in. 2,735 ft.
R. O. Roy's No. 1 McGee, 660 ft. N, 660 ft. W, C, Sec. 8-13-13.....Derrick.
R. O. Roy's No. 1-A Parker, C SW NW, Sec. 5-13-13....Began drlg. May 9; cmtd. 10-in. 223 ft.; drlg. 400 ft.
R. O. Roy's No. 1-B Parker Bros., 660 ft. N, 660 ft. W, SE cor., Sec. 31-14-13.....D.S. test 2,720-2,850 ft.; est. 5,-000,000 ft. gas.; cmtd. 6⅝-in. 2,720 ft.
R. O. Roy's No. 1 H. B. Sample, 660 ft. W, 660 ft. S, NE cor., Sec. 7-13-13.....Derrick.
R. O. Roy's No. 2 Tracy, 330 ft. S, 330 ft. E, NW cor. Began drlg. May 12; cmtd. 10-in. 230 ft.
R. O. Roy's No. 1 Whittaker, 330 ft. S, 330 ft. E, NW cor. SW NE, Sec. 5-13-13.....Cmtd. 6⅝-in. 2,729 ft.

**LA SALLE PARISH—URANIA**

Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e.....S.D. 1,570 ft.
La. Oil Ref. Corp.'s No. 2 La. Central O. & G. Co., 660 ft. N, 200 ft. E, SW cor., Sec. 27-10-2e.....Derrick.

**MOREHOUSE PARISH**

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4.....Location.
J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5.....Drlg. gray shale 2,780 ft.
Industrial Gas Co.'s No. 1 fee, 1,980 ft. S, 660 ft. W, NE cor., Sec. 3-20-4.....Location.
La. G. & F. Co.'s No. 26 Crossett, 645 ft. E, 674 ft. S, NW cor. Lot 9, Sec. 33-21-5.....Rig up.
Southern Carbon Co.'s No. 55 Fee, 1,980 ft. S, 660 ft. W, NE cor., Sec. 16-20-4.....Began drlg. May 10; cmtd. 12½-in. 176 ft.
Southern Carbon Co.'s No. 56 Fee, 660 ft. S, 660 ft. E, NW cor. NW, Sec. 15-20-4.....Location.
United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4.....Reported location abandoned; began drlg. May 9; cmtd. 12½-in. 181 ft.; drlg. 460 ft.

**OUACHITA PARISH**

Ark.-La. P. L. Co.'s No. 5 Rea & Green, 1,150 ft. S, 2,400 ft. E, NW cor., Sec. 2, in Sec. 32-18-4.....Rig up.
Amalgamated Co.'s No. 1-B Kate Cole, 660 ft. N, 660 ft. E, SW cor. NE SW, Sec. 25-20-4.....Rig up.
Carbon Consolidated, Inc.'s No. 3 Kate Cole, 660 ft. S, 544 ft. E, C, Sec. 26-20-4.....Tested 1,000,000 ft. gas 3,160 ft.; drlg. 2,195 ft.
Carbon Consolidated, Inc.'s No. 5 Guthrie (was United Oil & Nat. Gas Co.'s No. 5 Guthrie), 6,634 ft. N, 7,078 ft. W, cor. Secs. 49, 25 and 26, in Sec. 50-20-4..Derrick.
Hope Prod. Co.'s No. 2 Fairbanks, 1,876 ft. E, 623 ft. N, SW cor. SE, Sec. 25-20-4.....Location.
Hope Production Co.'s No. 4 Fairbanks, 616 ft. W, 623 S, NE cor., Sec. 36-20-4.....Derrick.
Jordan Drlg. Co.'s No. 6 Cole, 1,596 ft. W, 2,388 ft. N, SE cor., Sec. 49, in Sec. 50-18-4.....S.D. 2,005 ft.
Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.....Location.
Jordan Drlg. Co.'s No. 3 Pereboom, 1,207 ft. W, 264 ft. S, C, Sec. 9-18-4.....Location.
Lyons Gas Co.'s No. 2 Albright, 2,171 ft. W, 1,627 ft. S, most easterly cor., Sec. 13-18-3.....Rig up.
Ouachita Nat. Gas Co.'s No. 13 Smith, 5,684 ft. E, 8,148 ft. N, NW cor., Sec. 38 in Sec. 37-20-4.....Location.
Pipes & Mack's No. 1 Union Gas Products Co., Inc., 1,598 ft. W, 297 ft. N, SE cor. SW, Sec. 7-18-5.....Began drlg. May 8; cmtd. 13-in. 185 ft.; drlg. 400 ft.
Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4.....Location.
La. G. & F. Co.'s No. 3 Breard, S 9° 784 ft., S 81° E 594 ft., NW cor., Sec. 44-18-4.....Began drlg. May 8; cmtd. 12½-in. 152 ft., 9-in. 850 ft.
Union Gas Products Co.'s No. 1 Hare, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 22-19-5.....D.S. test 2,565 ft; dry; W.O.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.....Location.
United O. & N. G. Co.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4.....Derrick.

**RICHLAND PARISH**

Ark.-La. P. L. Co.'s No. 4-B Sartor, 660 ft. S, 1,320 ft. E, NW cor. SW, Sec. 18-16-6.....Drlg. 9-in. plug; T.D. 2,310 ft.
W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6.....Rig up.
Franklin O. & G. Co.'s No. 1 Thomason, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6.....Location.
Industrial Gas Co.'s No. 1 Alexander, 760 ft. E, 27 ft. N, SW cor. SE, Sec. 4-16-6.....Cmtd. 9-in. 890 ft.; drlg. 1,173 ft.
Industrial Gas Co.'s No. 1 Eliege, 1,320 ft. N, 660 ft. E, SW cor. SE, Sec. 4-16-6.....Rig up.
International Gas Prod. Co.'s No. 1 Minnie LaGrone, 760 ft. N, 858 ft. E, SW cor., Sec. 7-16-7.....Location.
Northern La. Nat. Gas Co.'s No. 1 Mulhern, 330 ft. S, 660 ft. E, NW cor., Sec. 33-16-6.....Cmtd. 6-in. 2,300 ft; arranging to test 2,444 ft.
Palmer Corp.'s No. 1-B Boykin, 177 ft. S, 787 ft. E, C, Sec. 33-17-6.....Location.
Palmer Corp.'s No. 6 Rhymes, 1,320 ft. S, 1,080 ft. E, NW cor., Sec. 3-16-6.....Derrick.
Palmer Corp.'s No. 8 Rhymes, 1,008 ft. E, 635 ft. S, NW cor., Sec. 33-17-6.....Cmtd. 6-in. 2,300 ft.
Palmer Corp.'s No. 1-E D. R. Sartor, 495 ft. S, 660 ft. E, NW cor., Sec. 16-16-6.....Cmtd. 10-in. 864 ft.; drlg. 1,117 ft. 174 ft.; drlg. 864 ft.
Pelican Nat. Gas Co.'s No. 1 M. Chapman, 660 ft. N, 660 ft. E, SW cor., Sec. 14-16-6.....Derrick.
Richland Operating Co.'s No. 1 Godfrey, 1,980 ft. N, 1,122 ft. E, SW cor., Sec. 25-16-6.....Rig up.
Richland Prod. Co.'s No. 1 T. S. McCoy, 1,353 ft. E, 559 ft. N, SW cor., Sec. 3-16-6.....Derrick.
Southern Carbon Co.'s No. 1 Hattock, 3,300 ft. N, 760 ft. W, SE cor., Sec. 2-16-6.....Location.
Southern Carbon Co.'s No. 1 H. H. Hemler, 660 ft. N, 1,435 ft. E, SW cor., Sec. 1-16-6.....Location.
Southern Carbon Co.'s No. 1-B J. H. Hemler, 619 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6.....Location.
Richland Prod. Co.'s No. 1 Thomason, 660 ft. E, 1,320 ft. S, NW cor. SW, Sec. 22-16-6.....Drlg. 2,390 ft.
Southern Carbon Co.'s No. 1 McCoy, 1,980 ft. E, 3,300 ft. S, NE cor., Sec. 16-16-6.....S.D. 2,450 ft.
Southern Carbon Co.'s No. 1-B M. L. McCoy, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 32-16-6.....Began drlg. May 10; cmtd. 12-in. 176 ft.
Southern Carbon Co.'s No. 1-C M. L. McCoy, 1,880 ft. N, 2,871 ft. E, SW cor., Sec. 1-16-6.....Location.
Southern Carbon Co.'s No. 2-C M. L. McCoy, 1,880 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6.....Location.
Southern Carbon Co.'s No. 1 L. S. Mulhern, 660 ft. S, 560 ft. W, NE cor. NW, Sec. 30-16-6.....Drlg. gummy shale 2,280 ft.
Southern Carbon Co.'s No. 4 E. A. and F. B. Sartor, 1,371 ft. E, 4,563 ft. S, NW cor., Sec. 18-16-6.....Drlg. sandy gumbo 1,260 ft.
Southern Carbon Co.'s No. 1-C T. R. Sartor, 660 ft. S, 660 ft. W, NE cor., Sec. 29-16-6.....Location.
Southern Carbon Co.'s No. 1 H. L. Thomason, 660 ft. N, 660 ft. E, SW cor., Sec. 2-16-6.....Location.
Southern Carbon Co.'s No. 1-B Thomason et al, 2,310 ft. W, 100 ft. S, NE cor., Sec. 23-16-6.....Location.
Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 660 ft. W, SE cor., Sec. 14-16-6.....Location.
United Carbon Co.'s No. 1 Duff, 1,320 ft. N, 660 ft. W, SE cor., Sec. 15-16-6.....Cmtd. 12-in. 183 ft., 8-in. 779 ft.
United Carbon Co.'s No. 1 Landers, 1,320 ft. S, 660 ft. E, NW cor., Sec. 3-15-6.....Cmtd. 8-in. 792 ft.; drlg. 1,340 ft.
United Carbon Co.'s No. 1 Cooper, 670 ft. W, 554 ft. N, SE cor., Sec. 24-16-6.....Drlg. 2,435 ft.
United Carbon Co.'s No. 2 Mulhern, 660 ft. S, 750 ft. E, NW cor. NW, Sec. 30-16-6.....Cmtd. 6-in. 2,280 ft.

**SABINE PARISH—PLEASANT HILL**

Bridges-Clark Oil Co.'s No. 2 J. W. Guy, 330 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33-10-12.....Set 6⅝-in. and packer 2,420 ft; tested dry; show gas 2,427-32 ft. and 2,447 ft.; T.A. 2,447 ft.
F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-13.....Rig up.
Standard Oil Co.'s No. 2 Ives, 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 34-10-13.....Drlg. chalk. 1,706 ft.

**SABINE PARISH—ZWOLLE**

T. D. Allison's No. 1 Holliday, Sec. 31-8-12, Zwolle Townsite.....Rig up.

Allen & Thompson's No. 1 McCormick, Lot 1, Blk. 3, NW NW, Sec. 31-8-12 ..... Began drlg. May 9; cmtd. 10-in. 101 ft.; drlg. 1,300 ft.

Allen & Thompson's No. 1 Wall, Zwolle townsite in Sec. 31-8-12 ..... W.O. 200 ft. oil; T.D. 2,350 ft.

Central Pet. Co.'s (was Bahan & Ryan's) No. 1 Mischel, 1,215 ft. N, 1,169 ft. W, SE cor. SW, Sec. 32-8-12 .... Bailed dry; W.O. 2,570 ft.

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 4 Bowman-Hicks, 330 ft. N, 330 ft. W, C, Sec. 34-8-12 ..... Cmtd. 6⅝-in. 2,345 ft.; T.D. 2,365 ft.

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 5 Bowman-Hicks, 900 ft. S, 1,400 ft. W, C, Sec. 34-8-12 ..... Cored sandy shale showing oil 3,200-05 ft.; reaming to bottom; T.D. 3,468 ft.

Loring Oil Co.'s No. 8 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SE, Sec. 33-8-12 ..... Derrick.

Loring Oil Co.'s No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SE, Sec. 34-8-12 ..... Coring 2,370 ft.

McFann & Pace's No. 1 Reeves, 581 ft. E, 588 ft. N, SW cor. NW, Sec. 31-6-12 ..... Began drlg. May 9; cmtd. 10-in. 101 ft.; drlg. 550 ft.

L. Nagle's No. 1 Corley, Sec. 31-8-12 ..... Began drlg. May 1; cmtd. 10-in. 102 ft; cmtd. 6-in. 2,202 ft.

Joe Burnham's No. 2 Bolin, 442 ft. E, 275 ft. N, SW cor. NE, Sec. 31-8-12 ..... Drlg. 1,675 ft.

J. R. Crawford's No. 1 Pearce, 408 feet S, 200 ft. E, NW cor. SW SE, Sec. 32-8-12 ..... S.D. 1,950 ft.

Dooley & Howard's No. 1 Williams, Sec. 31-8-12 ..... Rig up.

R. T. Dudney et al's No. 1 Pearson, SE cor. Lot 3, Blk. 3, SW NW, Sec. 31-8-12, Zwolle townsite ..... Show oil; bailed dry 2,370 ft.; arranging to test 2,576 ft.

Dixie Oil Co.'s No. 1 Nunn, 330 ft. N, 85 ft. W, C, Sec. 32-8-12 ..... Dry 2,497 ft; W.O.S.R. 2,514 ft; 1,600 ft. oil.

Gerke et al's No. 1 Okerson, Zwolle townsite, Sec. 31-8-12 ..... Derrick.

Glassell & Merren's No. 1 Thomas, Lot 13, Blk. 3, (Zwolle townsite), Sec. 31-8-12 ..... Oil show; S.D.; W.O. 2,600 ft.

H. E. Granville's No. 1 Parrott, 1,052 ft. S, 661 ft. E, NW cor., Sec. 31-8-12 ..... Derrick.

W. G. Gray, trustee's No. 1 Knowlton, 200 ft. S, 330 ft. W, NE cor. NW NE, Sec. 6-7-12 ..... Bailed dry; arranging to deepen 3,657 ft.

G. A. Henshaw et al's No. 1-A Sabine Lbr. Co., 200 ft. N, 760 ft. E, SW cor. SE NE, Sec. 31-8-12 ..... S.D. 2,525 ft.

G. A. Henshaw et al's No. 3-A Sabine Lbr. Co., 766 ft. N, 200 ft. E, SW cor. SE NE, Sec. 31-8-12 ..... Location.

G. A. Henshaw et al's No. 1-B Sabine Lbr. Co., 150 ft. S and E, C, Sec. 31-8-12 ..... T.A. 2,640 ft.

C. L. Jett, trustee's No. 1 Jones, 150 ft. C, Sec. 31-8-12 ..... 200 ft. oil; W.O.S.R.; T.D. 2,210 ft.

F. M. Hood's No. 2 Winston, 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle townsite ..... Rig up.

Ohio Oil Co.'s No. 3 Bowman-Hicks, 330 ft. S and W, NE cor. SE SW, Sec. 33-8-12 ..... Coring 2,747 ft.

Ohio Oil Co.'s No. 5 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor., Sec. 33-8-12 ..... Location.

Olsen Bros.' No. 1 Ferguson, 330 ft. N, 330 ft. E, SW cor. NW SE, Sec. 33-8-12 ..... Began drlg. May 9; cmtd. 10-in. 100 ft.; drlg. 700 ft.

Olsen Bros.' No. 1 Keeler, SW cor. SW SE, Sec. 27-8-12 .. T.A. 2,625 ft.

W. D. Perritt's No. 1 Crow, 150 ft. N, 150 ft. E, SW cor. SE SW SW, Sec. 30-8-12 ..... Drlg. 2,150 ft.

Philp Bros.' No. 1 Dow, Lot 1, Blk. 18, Zwolle townsite, Sec. 31-8-12 ..... S.D.; repairing rig 1,438 ft.

Posey et al's No. 1 Peterson, Blk. 16, Zwolle townsite, Sec. 31-8-12 ..... Derrick.

Ray-Dawes Drlg. Co.'s No. 1 Mansfield Hwd. Lbr. Co., Sec. 36-8-13 ..... T.A. 2,550 ft.

Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor., Sec. 4-7-12 ..... T.A. 2,640 ft.

Ruston Drlg. Co.'s No. 1-A Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SW, Sec. 35-8-12 ..... T.A. 2,690 ft.

Sabine Lbr. Co.'s No. 1 fee, 150 ft. N, 150 ft. W, C, Sec. 31-8-12 ..... Tested dry 2,610 ft.; S.D.; W.O.

C. E. Simmens' No. 1 Anderson, Sec. 31-8-12 (Zwolle townsite) ..... Rig up.

C. E. Simmons' No. 1 Leach, 435 ft. W, 113 ft. N, SE cor. SW NW ..... Location.

W. S. Smith et al's No. 1 Colquitt (Zwolle townsite), 500 ft. S, 430 ft. E, NW cor. SW NE, Sec. 31-8-12 .. Derrick.

W. S. Smith et al's No. 1 Henderson, 200 ft. S, 300 ft. E, NW cor. SE SE, Sec. 31-8-12 ..... Derrick.

W. S. Smith et al's No. 1 Williams (Zwolle townsite), 804 ft. N, 40 ft. W, SE cor. SW NE, Sec. 31-8-12 .... Rig up.

Stovall Drlg. Co.'s No. 1 Lefkovitz, 247 ft. N, 250 ft. W, SE cor. N½ SE NW, Sec. 33-8-12 ..... Bailed dry 2,694 ft. and 2,699 ft; W.O.

A. H. Tarver et al's No. 2 Sabine State Bank, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 26-8-12 ..... Began drlg. May 8; cmtd. 10-in. 102 ft.; drlg. 1,100 ft.

Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 ..... Derrick.

### SABINE PARISH—BLUE LAKE

H. S. Autrey's No. 1 Long-Bell, 1,120 ft. S, 1,120 ft. W, NE cor., Sec. 35-8-14 ..... Fishing; T.D. 2,373 ft.

R. L. Gay's No. 3 Bowman-Hicks, Sec. 18-7-13 ..... Drlg. 1,490 ft.

R. L. Gay's No. 4 Sabine Lbr. Co., Sec. 13-7-14 ..... Bailing to test 2,500 ft.

Ruston Drlg. Co.'s No. 1-B Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor., Sec. 24-7-14 ..... Cmtd. 6⅝-in. 2,073 ft.; bailing to test; T.D. 2,470 ft.

### UNION PARISH

Greenwood Prod. Co.'s No. 1-B Guinn, 1,980 ft. N, 1,980 ft. W, SE cor. NE, Sec. 32-21-3 ..... Drlg. 1,800 ft.

Greenwood Prod. Co.'s No. 1-C Guinn, 1,320 ft. N, 3,300 ft. W, SE cor. NE, Sec. 32-21-3 ..... Location.

Stovall Drlg. Co.'s No. 1 Murray, 1,650 ft. N, 330 ft. W, SE cor. SW, Sec. 32-23-4 ..... Location.

### WEBSTER PARISH—SAREPTA AND SHONGALOO

E. W. Bateman's No. 1 Cook, 200 ft. S, 200 ft. W, NE cor. S½ SW NE, Sec. 2-22-11 ..... Rig up.

E. W. Bateman's No. 2 Cook, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 2-22-11 ..... Location.

Magnolia Pet. Co.'s No. 3 Scoggins, 165 ft. N, 330 ft. W, SE cor. SW NW, Sec. 1-22-11 ..... W.O.S.R; T.D. 2,709 ft.

Magnolia Pet. Co.'s No. 1 Gardner, 175 ft. N, 230 ft. E, SW cor. SE NW, Sec. 1-23-11 ..... Derrick.

J. S. Martin, trustee's No. 1 Taylor, 330 ft. N, 330 ft. W, SE cor. NW NW, Sec. 36-23-11 ..... Location.

Ideal O. & G. Co.'s No. 1 Coyle, 200 ft. N, 300 ft. E, SW cor. SW SE, Sec. 24-23-11 ..... Derrick.

K. C. Supply Co.'s No. 1 Cochrane, 330 ft. N, 330 ft. W, SE cor. E½ NW, Sec. 36-23-11 ..... Rig up.

Merrick Oil Corp.'s No. 2 Slack, SE cor. NW, Sec. 36-22-11 ..... Began drlg. May 8; cmtd. 10-in. 117 ft.; drlg. 1,710 ft.

Mt. Vernon Oil Co.'s No. 2 Pardee, 200 ft. S, 1,500 ft. E, NW cor. NE SW, Sec. 3-22-11 ..... 1,400 ft. fluid; 6 ft. sand; W.O.S.R.; T.D. 2,653 ft.

Sarepta Oil Co.'s No. 1 Slack, SW cor. NW NE, Sec. 36-23-11 ..... Rig up.

Sarepta Oil Co.'s No. 2 Gardner, NE SW, Sec. 1-22-11 .. Rig up.

### ARKANSAS

### JOHNSON COUNTY

Ark.-La. Pipe Line Co.'s No. 1 Cline, 660 ft. S, 660 ft. W, NE cor. NE SE, Sec. 16-16-24 ..... Drlg. 617 ft.

Blackwell O. & G. Co.'s No. 1 Western Coal & Mining Co., C NE SE, Sec. 20-9-25 ..... Rig up.

### NEVADA COUNTY

Roy Davis et al's No. 1 Chas. Henry, 1,120 ft. N, 1,-130 ft. W, SE cor., Sec. 10-12-20 ..... Rig up.

C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... S.D. 2,810 ft.

### OUACHITA COUNTY—SMACKOVER

L. K. Hamilton's No. 2 Arnold & Doyle, 460 ft. E, NW cor. SE SE, Sec. 23-15-16 ..... Cmtd. 6⅝-in. 2,000 ft.; T.D. 2,004 ft.

J. D. Reynolds' No. 3 Berg, NE cor. SE SW, Sec. 27-15-15 ..... W.O.S.R; 200 ft. fluid 2,080 ft.

J. D. Reynolds' No. 4 Berg, 300 ft. S, 180 ft. W, NE cor. SE SW, Sec. 27-15-15 ..... Began drlg. May 9; cmtd. 10-in. 41 ft.; drlg. 1,350 ft.

### OUACHITA COUNTY—STEPHENS

Buffalo Oil Co.'s No. 1 Trammell, NE cor. SW NE, Sec. 11-15-19 ..... Rig up.

Magnolia Pet. Co.'s No. 2 Grayson, 150 ft. N, 200 ft. W, SE cor. NE, Sec. 21-15-19 ..... 200 ft. fluid 50% S.W.; W.O.S.R. 11 ft. sand; T.D. 2,193 ft.

### UNION COUNTY—CHAMPAGNOLLE

Sundby et al's No. 2 Perdue, 75 ft. S, 150 ft. E, NW cor., Sec. 33-16-14 ..... Began drlg. May 11; drlg.

Root Refineries, Inc.'s No. 2 Jerry, Sec. 21-17-14 ..... Began drlg. May 12; drlg.

### UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15 ..... Fishing for liner 2,214 ft.

Malloy & Co.'s No. 4 Goodwin, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 36-17-16 ..... Stg. 2-in. tubing; T.D. 2,239 ft.

Malloy & Co.'s No. 1 Murphy, Sec. 1-18-16 ..... Rig up; W.O.

Malloy & Co.'s No. 3 Robertson, NE cor. S½ SW NE, Sec. 6-18-15 ..... Location.

Woodley Pet. Co.'s No. 5 Alderson, 175 ft. S, 175 ft. E, NW cor. NW SW, Sec. 31-17-15 ..... Arranging to drill in with cable tools; T.D. 2,150 ft.

### EAST TEXAS

### HARRISON COUNTY

Ark.-La. Pipe Line Co.'s No. 2 Gibson, 330 ft. N, 330 ft. W, SE cor. Gibson tract, J. Womack Sur. ..... Began drlg. May 1; cmtd. 12-in. 160 ft.; drlg. 2,248 ft.

Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. ..... Cored shale 2,750 ft.

### PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 12 Werner, 1,102 ft. N, 132 ft. E, SW cor. 15-ac. tract in E. F. Mitcheson Sur. .... Estimated 5,000,000 ft. gas; DA test 3,125-74 ft; cmtd. 7-in. 125 ft.; bailing to test 3,174 ft.

Calatex O. & G. Co.'s No. 3 Caldwell, 243 ft. S, 1,034 ft. W, SE cor. Jno. Womack Sur. in Jas. Shadoin Sur.. Drlg. 1,640 ft.

Nat. Gas Prod. Co.'s No. 3 Roquemore, B. C. Jordan Sur.. Tested dry 4,375 ft.; drlg. 4,400 ft.

Doris Thomason's No. 10 Crenshaw, 1,730 ft. S, 2,594 ft. W, SE cor. Jno. Womack Sur. in B. C. Jordan Sur... Rig up.

## WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 65)

### DEWITT COUNTY

Gibson & McIntyre's No. 1 William Van Roeder ..... T. D. 1,480 ft.; shut down.

Republic Prod. Co.-Simms Pet. Corp.'s No. 1 E. T. Clark 778-ac., 1,450 ft. from SE line, 7,500 ft. from SW line of tract in the Jose Santos, 4 miles S from Yorktown ..... T. D. 4,080 ft.; drlg. in Fayette formation.

Louisiana Oil & Ref. Co.'s No. 1 William Kleavermann 100-ac., 400 ft. out of the NE cor. of tract, 3 miles SW of Nordheim near Karnes County line in the Robert Gallettry Sur. ..... T. D. 1,264 ft.; drlg. in Frio formation.

H. T. Roe's No. 1 Leinhardt ..... T. D. 2,215 ft.; shut down; installing additional boiler.

### DUVAL COUNTY

T. W. Callahan and W. M. Howard's No. 1 J. M. Luby, 3,960 ft. N line, 3,960 ft. W line Sur. 24 ..... T. D. 1,908 ft.; drlg. in gumbo.

Southern Crude O. P. Co.'s No. 1 John Dinn, 3,450 ft. S line, 119 ft. W line of Sur. 480 ..... T. D. 3,220 ft.; drlg.

Southern Oil Co.'s No. 1 Welder Wood, Sur. 216 ..... T. D. 1,856 ft.; drlg.

### EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 330 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G Sur. No. 25 ..... T. D. 1,005 ft.; drlg. in lime rock.

Griffith's No. 1 Wardlaw, 150 ft. from S line, 1,505 ft. from Sec. 60, Blk. US, J. J. Clift Sur. ..... T. D. 3,000 ft.; shut down, contract depth.

### FRIO COUNTY

Walton & North's No. 1 Trebbie, 150 ft. N line, 150 ft. E line, Sec. 64, in the Henry Castro Sur. ..... T. D. 3,560 ft.; shut down.

### FAYETTE COUNTY

Kelly et al's No. 1 E. M. Burke, in the C. J. A. Weaver Sur. ..... T. D. 488 ft.; shut down.

Moore et al's No. 1 Kerr, 250 varas S of CNL of M Muldoon lease ..... T. D. 2,485 ft.; shut down.

Muldoon Oil Co.'s No. 1 J. A. Kerr, 2,900 ft. from S, 3,250 ft. from W of M. Muldoon Sur., 2 miles W of Muldoon ..... T. D. 3,206 ft.; fishing for 11 joints 4-in. drill stem.

Hoffer-Stanton's No. 1 M. E. Manton, 700 ft. from N line, 275 ft. from E line 102-ac. tract in the W. H. Taylor Sur., 8 miles NE from Muldoon ..... Location.

### GOLIAD COUNTY

Humble Oil & Ref. Co.'s No. 1 Lackey & Weldon, 2,000 ft. from SE and SW lines of the Lackey & Weldon 1,000-ac. tract out of the most SW cor. thereof, in the Javiano Gomez Sur. ..... T. D. 3,960 ft.; tested salt water on drill stem test; shut down.

Wm. F. Morgan's No. 1 Peirrie, 7,600 ft. SW of NE line, 2,550 ft. SW of NW line of Fannie Peirrie 2,350-ac. tract, SW part of county in the Vincente Ramon Sur. ..... T. D. 450 ft.; set 450 ft. 10-in. surface csg.; W.O.C.

### GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur. ..... T. D. 2,350 ft.; shut down.

Fitzsimmons & Perrinot's No. 1 Z. Huber, 2,100 varas from NW line, 1,450 varas from NE line (river) of survey, 2¾ miles SE of Darst Creek, in Stephen Smith Sur. ..... T. D. 3,317 ft.; shut down.

A. J. Keiffer et al's No. 1 B. B. Dix, 5,550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek ..... T. D. 2,800 ft.; shut down; 1,100 ft. drill stem in hole.

Atlbus et al's No. 1 C. Martin, 268 ft. from N line, 2,650 ft. W line 210-ac. tract in the M. A. Williams Sur. ..... T. D. 2,020 ft.; shut down.

Finnell & Elam's No. 1 J. F. Robinson, 2,000 ft. N line, 4,420 ft. E line, in the J. H. Livergood, 2½ miles NE from Waelder ..... T. D. 2,185 ft.; drlg. in Mt. Selman.

### GUADALUPE COUNTY

Grayburg Oil Co.'s No. 2 Wells, 5,730 ft. E line, 2,490 ft. S line of NE cor. of Wells tract in the James D. Baume Sur., 6 miles SW from Darst Creek ..... Laying water line.

Hadley et al's No. 1 Hartwig, 2,000 ft. S-N line, 930 ft. E-W line of survey, Wm. Hartung 656-ac. in the Richard Nixon Sur., 6 miles SW from Darst Creek ..Completed water well.

Morgan Lewis et al's No. 1 Link (80 acres), 2,780 ft. E of SW line (Guadalupe River), 835 ft. from NW line of Link 80-ac. tract in the A. M. Esnaurrizar Sur., 7 miles NW from Seguin .....T. D. 800 ft.; drlg. in Georgetown.

Mid-Kansas Oil Co.'s No. 2 Waldrop, 750 ft. E from E line, 1,950 ft. from N line 330-ac. tract in the George Allen Sur., near Staples .....Location.

Suttle et al's No. 1 A. Baenziger, 150 ft. from SE cor. of 125-ac. tract in the A. O. Mansola Sur., 5 miles S from Seguin .....T. D. 1,940 ft.; drlg. in Buda lime.

Transcontinental Oil Co.'s No. 1 W. M. Dollie, 150 ft. from S line, 1,422 ft. from E line of 78-ac. tract in the E. Gotarie Sur., 5 miles SE from Seguin ....Spudded in.

Tidal Oil Co.'s No. 1 J. Seiligman, 150 ft. from N and E lines of the J. Seiligman 40 ac. NW cor. of J. H. Williamson Sur., 15 miles S from Seguin .....T. D. 242 ft.; set surface csg.

**JACKSON COUNTY**

The Texas Company's No. 1 Mitchell, 1,750 ft. E, 880 ft. N of SW cor. Ewing Sur. .....T. D. 260 ft.; drlg. in gumbo.

**JIM WELLS COUNTY**

E. W. Ogden's No. 1 G. Farris, M. Perez Sur. .....T. D. 2,615 ft.; shut down.

**KARNES COUNTY**

Hewitt et al's No. 1 H. N. Matula, 450 ft. from E and center of NW and SE lines of 125-ac. farm in the Victor Blanco Sur. .....T. D. 4,000 ft.; shut down.

J. F. Morrisey et al's No. 1 Ragsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCoull Sur. ....Derrick.

Mundine Investment Co.'s No. 1 A. D. Wilburn, C of 143 ac. in H. K. Hardy Sur., 3 miles SE from Dunge .....Location.

Hewitt et al's No. 1 W. E. Porter .....T. D. 3,650 ft.; shut down.

**KENDALL COUNTY**

Borgett et al's No. 1 Haag, W. Avery Sur. .....T. D. 728 ft.; csg. parted at 325 ft.

Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia .....T. D. 400 ft.; shut down.

Dickinson et al's No. 1 Edmondson, 150 ft. from S line, 350 ft. from W line of tract in the J. O. Blair No. 72 Sur., 1 mile NW from Kendalia .....Moving on.

Seaboard Oil & Gas Co.'s No. 1 W. Asken, SW cor. of Sur. in the Miguel die Toro Sur., 3 miles N from Sisterdale .....T. D. 1,090 ft.; waiting on 8-in. csg.; to shut off water.

Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale .....T. D. 1,280 ft.; drlg. in shale; water in hole.

F. B. Sterling's No. 1 Willie Weiner, approx. 800 ft. each way out of SE cor. of the J. C. Tarry Sur., 8 miles W from Kendalia .....T. D. 914 ft.; building storage; will pump (old well reinstated).

F. B. Sterling's No. 1 McCracklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia .....Shut down; to move in heavy rig.

**KERR COUNTY**

Mashe & Tunstill's No. 1 Love Ranch, 1,000 ft. from W line of Sec. 1,594, 100 ft. S of S line of Sec. 1,597, in the G.C.S.D.&R.G.N.G. Sur. .....Rigged up.

**KINNEY COUNTY**

Magnolia Petroleum Co.'s No. 1, SE cor. of Bladz Sur., near S.P.R.R., close to Blume test on Wardlow ranch, W part of county, 2½ miles from Blume ....T. D. 1,330 ft.; drlg. in lime rock.

A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur., in the Poindexter-Burns Sur. .....T. D. 275 ft.; shut down.

Mardon Oil Co.'s No. 2 Jim Clamp, in the John Winter Sur. No. 346, near No. 1 .....T. D. 1,400 ft.; shut down.

**LASALLE COUNTY**

Salt Lake City Pet. Co.'s No. 1 Beckwith, Sur. 17, 150 ft. S line, 150 ft. E line .....T. D. 2,900 ft.; shut down.

**LAVACA COUNTY**

McElreath & Suggett's No. 1 Julius Heinshohn, 361 ft. to E, 523 ft. to S line of farm, in the G.W.&W.H. Sur. .....T. D. 4,006 ft.; dry and abandoned.

**LIVE OAK COUNTY**

Simmons Oil Co.'s No. 1 Richard Coquat, in James C. Hill Sur., 2,250 ft. to S line, 1,750 ft. to E line, 7 miles NE of Oakville .....T. D. 4,012 ft.; abandoned dry.

Dougherty et al's No. 1 Jim Dougherty, 2,254 ft. SE of NW line, 750 ft. NE of SW line of M. Boren Sur. ...Spudded in.

**MAVERICK COUNTY**

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 116, Blk. 7, I.&G.N. Sur. .....T. D. 2,636 ft.; shut down.

Rycade Oil Corp.'s No. 5 Chittim, 600 ft. W of No. 3 Chittim, 500 ft. E line, 225 ft. from S line of SE Sec. 115, Blk. 7, in the I.&G.N. Sur. .....T. D. 3,560 ft.; drlg. in Edwards lime.

Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. .....T. D. 4,990 ft.; gray lime; drlg.

**MEDINA COUNTY**

Pat Armstrong's No. 1 C. W. Butts, in George C. Hanson Sur. .....T. D. 1,350 ft.; drlg. in limy shale.

R. M. Perkins' No. 1 R. J. Taylor, 270 ft. from W line, 1,200 ft. from S line of 40-ac. tract in the S. Castro No. 136, 3½ miles SW from Hondo .....Spudded in.

Pan American Pet. Co.'s No. 1 Antoine Hart, in Harrison Sur. No. 799, 15 miles S from Hondo .....T. D. 1,050 ft.; drlg.

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay .....Rigging up.

Catherine Ryan's No. 1 H. Haas, 300 ft. from S line, 300 ft. from E line of tract in the J. Burleson No. 64 Sur., 12 miles W from Noonan .....T. D. 932 ft.; tested small amount oil.

Sun Oil Co.'s No. 1 Edgar, 450 ft. from E line, 150 ft. from S line of 320-ac. tract in the J. Buell No. 362, 3 miles N from Noonan .....Rig up.

Sunflower Oil Co.'s No. 1 M. Modfield, 3,340 ft. from E line, 1,335 ft. S line of 640-ac. tract, Sur. 532, 10 miles S from Hondo .....Spudded.

Ike Pryor's No. 1 Pryor, 400 ft. N line, 400 ft. from E line of the George Vose No. 405 Sur., 4 miles NE from La Pryor .....T. D. 1,100 ft.; setting 10-in. csg.; 250,000 ft. gas per day but will cement off.

Donaldson Oil & Dev. Co.'s No. 2 Adams Co., James Hillenmeyer No. 25 Sur., 500 ft. to E line of Sur., 150 ft. to S line of N half of Sur. .....Rig up.

Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of Sur., 478.6 miles W from Devine .....T. D. 400 ft.; drlg. in sandy shale.

**STARR COUNTY**

Smith & Adams' No. 1 Welch, Perdernal Sur. .....T. D. 841 ft.; standing.

**NUECES COUNTY**

H. Grimm et al's No. 1 A. R. Roberts, Blk. 79, Winter Vegt. Garden Subd., 6 miles NW of Robstown, 12 miles NE Agua Dulce Field .....T. D. 3,535 ft.; shut down; waiting on orders; contract depth.

**SAN PATRICIO COUNTY**

George B. Pickett's No. 1 Baldwin, 9,000 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil Sur., Abstract 311 .....T. D. 2,410 ft.; shut down; waiting for water to subside.

LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line .....T. D. 3,032 ft.; shut down in sandy shale.

**UVALDE COUNTY**

Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde .....T. D. 1,305 ft.; drlg. in lime rock.

Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde .....T. D. 985 ft.; shut down; moving in heavier rig.

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 .....T. D. 1,725 ft.; drlg. gray lime rock.

**VICTORIA COUNTY**

Lion Oil & Ref. Co.'s No. 1 J. A. McFadden, 2,577 ft. W, 514 ft. N from NE cor. of C. O. Edwards tract in M. J. Traviesa Sur. .....T. D. 1,603 ft.; drlg. in gumbo.

**WILLACY COUNTY**

Weimer-Richardson's No. 1 Elmore .....T. D. 1,860 ft.; shut down in gumbo.

**WILLIAMSON COUNTY**

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 220 ft. N and 330 ft. E of Sur. .....Rigging up.

Fred Beatty's No. 1 H. Bland, 450 ft. from N line, 1,000 ft. from E line of tract, in the P. Coursey Sur., 1 mile E from Taylor .....T. D. 1,176 ft.; shut down.

Fred Beatty's No. 1 J. B. Pumphrey, 1,328 ft. from S and E lines of Mrs. J. B. Pumphrey 168-ac. tract in the W. Cartwright Sur. .....Rigging up.

M. Bartlett et al's No. 1 R. E. Thomas, 450 ft. from N line, 170 ft. from E line of S 50 of 100-ac. of farm in the H. Owen Sur. .....Spudded in.

E. L. Chapman's No. 2 J. H. McConnell, 1,070 ft. from W line, 150 ft. from N line of tract in the S. Miller Sur. .....Rigging up.

Elliot et al's No. 1 S. W. Jones, 600 ft. from W line, 400 ft. from S line of Alvert Nantz Sur. .....Spudded in.

E. L. Chapman's No. 2 Fuchs, 150 ft. SW line, 750 ft. NW line of 93-ac. tract in the S. Miller Sur. .....T. D. 1,000 ft.; drlg.

G. B. Peterman's No. 2 J. C. Abbott, 450 ft. from S and W line of Abbott 100-ac. tract, in the Simon Miller Sur., SE from Thrall .....Rigging up.

Bridwell et al's No. 1 H. L. Martin, 1,150 ft. from N line, 150 ft. from W line of Simon Miller Sur. .....Rigging up.

McNeil et al's No. 1 R. L. Abbott, 330 ft. NW line, 150 ft. NE line of Abbott 15-ac. tract, in the S. Miller Sur. .....Spudded in.

Powell & Kykendall's No. 1 Christian Mager, in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres .....Old well deepening.

E. L. Chapman's No. 1 Barney Lawrence, 330 ft. from SE and SW lines of farm, in the Simon Miller Sur...Rigging up.

E. L. Chapman's No. 1 J. F. McConnell, 150 ft. from S and W of 100-ac. farm, in the Simon Miller Sur....T. D. 1,922 ft.; Serpentine; light show oil 1,900 ft.

E. R. Ertell's No. 1 J. F. McConnell, 295 ft. from N line, 180 ft. from W of S 50-ac. of 100-ac. farm, in the Simon Miller Sur. .....T. D. 2,136 ft.; small oil show 1,100 ft.

Keeshan et al's No. 1 R. L. Abbott, 170 ft. from N line, 772 ft. from W line of farm, in the Simon Miller Sur. .....Derrick up.

E. W. Marts et al's No. 1 R. L. Abbott .....Spudded in.

Taylor Temple Oil Co.'s No. 1 F. M. Cain, 876 ft. from E line, 150 ft. from N line of C. D. Johnson 109-ac. tract, in the S. Miller Sur. .....Rigging up rotary.

J. A. Thompson's No. 1 T. H. Martin, 150 ft. N and E lines of 20-ac. tract, in the S. Miller Sur. .....Location.

Westheimer & Daube's No. 1 R. L. Abbott, 150 ft. from N and W lines of 57-ac. tract, in the S. Miller Sur...Location.

R. R. Wilder's No. 1 H. T. Martin, 158 ft. from N and E lines of H. T. Martin 76.25-ac. tract, in the S. Miller Sur. .....Rigging up rotary.

L. W. Wilson et al's No. 1 W. L. Lawrence, 150 ft. from W line and C N and S of 35-ac. tract or 1,400 ft. from SW line, 1,450 ft. SW line of H. Owens Sur. ...Spudded in.

**ZAPATA COUNTY**

B. F. Nixon's No. 1 A. Gutierres, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant ....Rigging up.

National Oil Co.'s No. 1 D. B. Adams .....T. D. 690 ft.; shut down; lack of water; making considerable gas; blowout from shallow depth while pumping for water; laying water line.

**ZAVALA COUNTY**

Weigand Bros.' No. 1 W. L. Gates, Hooper & Wade Sur. No. 13, 1,320 ft. S of N line, 1,220 ft. W of NE cor. Sur., about 16 miles S of Batesville .....T. D. 2,240 ft.; shut down.

Thomas T. Taylor's No. 1 Townsite of Delmonte, 600 ft. SE of city water works .....Location.

Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34 .....T. D. 1,180 ft.; drlg. sandy shale.

Southern Crude Oil Purch. Co.'s No. 1 Nat M. Washer, in the T. Pinckhardt Sur. No. 180, 1 deg. E, 6,795 ft. from SE cor. .....T. D. 4,277 ft.; hard shale and lime in Glenrose formation.

F. Baldwin's No. 1 Washer, 300 ft. S and E of Sec. 34, in the W. E. Erskin Sur. .....T. D. 1,204 ft.; drlg. in sandy shale.

## GULF COAST FIELDS AND WILDCATS

(Continued from Page 83)

Humble & Valley's No. 2-B Hardy .....Location.
Humble & Valley's No. 1-C Mitchell .....Drlg. shale and lime 857 ft.
Humble & Valley's No. 7 Payne .....Derrick.
Humble & Valley's No. 8 Payne .....Derrick.
Humble & Valley's No. 9 Payne .....Derrick.
Humble & Valley's No. 2 Sherrod .....Derrick.
Humble & Valley's No. 4 Sherrill .....Rigging up to pump.
Humble & Valley's No. 7 Thompson .....Drlg. shale and lime 1,130 ft.
Humble & Valley's No. 7 Urban .....Shut down 1,165 ft.
Humble & Valley's No. 8-A Walton .....Drlg. sand, shale and lime 1,444 ft.
Humble & Valley's No. 3 J. W. Wilson .....Drlg. shale 3,496 ft.
Humble & Valley's No. 6 Woodley .....Derrick.
Humble & Valley's No. 7 Woodley .....Derrick.
Humble & Valley's No. 8 Woodley .....Derrick.

**DEWALT—FORT BEND COUNTY**

Humble Oil & Refg. Co.'s No. 13 Brazos .....Total depth 3,605 ft.; cmtd. 9⅝-in. csg. 3,597 ft.
Humble Oil & Refg. Co.'s No. 10 Sugarland .....Rig.
Humble Oil & Ref. Co.'s No. 10 Nelson .....Drlg. 1,412 ft.

**HUMBLE—HARRIS COUNTY**

Benedum & Trees No. 1 Foley, south .....Sticky shale 5,728 ft.; cmtd. 9⅝-in. csg. 5,700 ft.
Humble Oil & Ref. Co.'s No. 12 Williams .....Sand and shale 4,532 ft.; cmtd. 9⅝-in. csg. 4,255 ft.
Rio Brave Oil Co.'s No. 1 fee, west .....Tested salt water 4,293 ft.; sidetracked to oil sand 3,765 ft.; to test.
Sun Oil Co.'s No. 5 Bender, west .....Location.
Sun Oil Co.'s No. 6 Bender, west .....Drlg. gumbo and lime 2,081 ft.
Sun Oil Co.'s No. 7 Bender, west .....Location.
Sun Oil Co.'s No. 48 River, north .....Drlg. lime rock 1,941 ft.
The Texas Company's No. 24 House, north .....Running tubing 3,968 ft.
The Texas Company's No. 42 Stevenson, south .....Drlg. brittle shale 4,882 ft.

The Texas Company's No. 22 Wheeler & Pickins, northeast ..... Drlg. shale, lime and boulders 4,224 ft.
The Texas Company's No. 1 Texas Pipe Line Co., west... Drlg. sand and shale showing oil 3,732 ft.

**BLUE RIDGE—FORT BEND COUNTY**

Gulf Production Co.'s No. 18 Luscher, south ..... Derrick.
Navarro Oil Co.'s No. 9-A Robinson, west ..... Drlg. gumbo 2,513 ft.
Sinclair Oil & Gas Co.'s No. 1 Simms-Blakely ..... Drlg. shale 5,618 ft.
Sinclair Oil & Gas Co.'s No. 4 Blakely (workover) ..... Comp. pumping 3 bbls. oil 2,296 ft.

**PIERCE JUNCTION—HARRIS COUNTY**

Continental Oil Co.s No. 2 Prudential (workover) ..... Abandoned 4,322 ft.
Gulf Production Co.'s No. 32 Taylor ..... Drlg. hard sand and lime 3,462 ft.
Navarro Oil Co. and Texas Exp. Co.'s No. 10 Dooley (workover) ..... Comp. flowing 400 bbls. oil 3,915 ft.
Rio Brave Oil Co.'s No. 12-A Settegast (workover) ..... Drlg. sandy shale 4,982 ft.
Rio Brave Oil Co.'s No. 18-A Settegast, west ..... Drlg. gumbo and lime 2,253 ft.
Rio Brave Oil Co.'s No. 19-A Settegast ..... Location.

**LIBERTY—LIBERTY COUNTY**

Empire Gas & Fuel Co.'s No. 12 O'Brien ..... Oil sand 3,512-38 ft.; cmtd. 8⅝-in. csg. 3,502 ft.
The Texas Company's No. 7 Green, northwest ..... Spudded.

**HULL—LIBERTY COUNTY**

The Texas Company's No. 8 Hannah-Vacuum ..... Setting liner 5,117 ft.

**BIG CREEK—FORT BEND COUNTY**

Gulf Production Co.'s No. 58 Davis ..... Drlg. gumbo and lime 3,267 ft.
The Texas Company's No. 2 Fee (workover) ..... Set 3 joints screen 3,774-3,842 ft.; T. D. 3,992 ft.; pumping salt water.

**LOST LAKE—CHAMBERS COUNTY**

Pure Oil Co.'s No. 11 Mayes ..... Recementing csg. after blowout 2,704 ft.

**NASH—BRAZORIA COUNTY**

Rycade Oil Corp.'s No. 15 Wisdom (workover) ..... Pulling screen to deepen 3,747 ft.

**SOUR LAKE—HARDIN COUNTY**

Austin & Fenell's No. 1 Watson ..... Shut down 2,394 ft.

**SARATOGA—HARDIN COUNTY**

Rio Bravo Oil Co.'s No. 83-A Cotton ..... Comp. pumping 2 bbls. oil 424 ft.
Rio Bravo Oil Co.'s No. 84 Cotton ..... Rig.

**GOOSE CREEK—HARRIS COUNTY**

Humble Oil & Ref. Co.'s No. 77 Simms-Smith ..... Drill stem stuck 6,642 ft.
A. F. Bradbury's No. 5 Gilliette ..... No report.

**SPINDLETOP—JEFFERSON COUNTY**

Sun Oil Co.'s No. 3 Price (workover) ..... Comp. pumping 15 bbls. oil 5,149 ft.
Yount Lee Oil Co.'s No. 51 McFaddin (workover) ..... Rig up to deepen 4,517 ft.
Yount Lee Oil Co.'s No. 81 McFaddin (workover) ..... Comp. flowing 60 bbls. oil 4,318 ft.; T. D. 4,404 ft.
Yount Lee Oil Co.'s No. 131 McFaddin ..... No report.
Yount Lee Oil Co.'s No. 132 McFaddin ..... Drlg. shale and lime 4,058 ft.
Yount Lee Oil Co.'s No. 133 McFaddin ..... Drlg. shale and lime 3,900 ft.
Yount Lee Oil Co.'s No. 134 McFaddin ..... Drlg. shale and lime 3,620 ft.
Yount Lee Oil Co.'s No. 135 McFaddin ..... Drlg. sand and shale 3,200 ft.
Yount Lee Oil Co.'s No. 32 Gladys City ..... Drlg. heaving shale 4,026 ft.
Yount Lee Oil Co.'s No. 45 Gladys City (workover) ..... Drlg. shale and lime 5,647 ft.

**WEST COLUMBIA—BRAZORIA COUNTY**

Saxet Oil Co.'s No. 3 Hogg ..... Derrick.

**NORTH DAYTON—LIBERTY COUNTY**

Victor Oil Co.'s (V. H. Borsodi) No. 1 Gulf ..... Tested salt water 4,466 ft.; pulling screen to deepen
Victor Oil Co.'s (V. H. Borsodi) No. 2 Gulf ..... Drlg. water sand 4,786 ft.
Houtex Oil Co.'s No. 1 Simmons & Brown ..... Tested salt water 5,097 ft.; drlg. sand and shale 5,278 ft.
Harrison Oil Co.'s No. 5 Quintette ..... Location.
Houtex Oil Co.'s No. 1 Wilhite ..... Drlg. sand and shale 4,383 ft.
The Texas Company's No. 1 Paraffine fee ..... Cementing 6⅝-in. csg. 4,940 ft.; T. D. 4,951 ft.

**HIGH ISLAND—GALVESTON COUNTY**

Gulf Production Co.'s No. 10 Smith ..... Drlg. hard sand and boulders 2,589 ft.
Marrs McLean's No. 18 Cade ..... Drlg. hard sand 2,935 ft.

**ORCHARD—FORT BEND COUNTY**

Gulf Production Co.'s No. 32 Moore ..... Oil sand 3,996 ft.
Gulf Production Co.'s No. 21 Moore ..... Drlg. sticky shale 3,779 ft.

**ESPERSON—LIBERTY COUNTY**

Cranfill-Reynolds Oil Co.'s No. 5 Esperson ..... Drlg. shale 5,062 ft.
Cranfill-Reynolds Oil Co.'s No. 9 Esperson ..... Drlg. hard sand 4,803 ft.
Cranfill-Reynolds Oil Co.'s No. 11 Esperson ..... Drlg. gumbo 1,731 ft.
Cranfill-Reynolds Oil Co.'s No. 12 Esperson ..... Location.
Cranfill-Reynolds Oil Co.'s No. 13 Esperson ..... Location.
Cranfill-Reynolds Oil Co.'s No. 3 Davis ..... Comp. 15,000,000 ft. gas daily 2,090 ft.
Cranfill-Reynolds Oil Co.'s No. 4 Davis ..... Rig.
Cranfill-Reynolds Oil Co.'s No. 1 Vajdak (workover) ... Drlg. shale 6,824 ft.
Republic Production Co.'s No. 1 Moores Bluff ..... Drlg. gumbo 410 ft.
Yount Lee Oil Co.'s No. 3 Moore's Bluff ..... Drlg. sand and shale 4,760 ft.

**BOLING—WHARTON COUNTY**

C. S. Thomas' No. 1 Volney ..... Rig.
C. S. Thomas' No. 1 Taylor ..... Rig.

**REFUGIO—REFUGIO COUNTY**

Houston Oil Co.'s No. 1 Kay ..... Preparing to make drill stem test 5,086-89 ft.
Houston Oil Co.'s No. 1 O'Brien, Block 5 ..... Drlg. gumbo 1,183 ft.
Houston Oil Co.'s No. 1 City, Block 20 ..... Gumbo 506 ft.; cmtd. 13⅜-in. csg.
Houston Oil Co.'s No. 1 City, Block 59 ..... Location.
Houston Oil Co.'s No. 1 O'Connor ..... Drlg. shale 170 ft.
Houston Oil Co.'s No. 1 West ..... Gumbo 467 ft.; cmtd. 13⅜-in. csg.
Houston Oil Co.'s No. 1 Rose Lambert ..... Drlg. sandy shale and lime 3,741 ft.
Houston Oil Co.'s No. 2 Rose Lambert ..... Rig.
Houston Oil Co.'s No. 1-A Fannie Heard ..... Gumbo 500 ft.; cmtd. 13⅜-in. csg.
Houston Oil Co.'s No. 1 Sitterle ..... Oil sand 3,682-88 ft.; cmtd. 8¼-in. csg. 3,680 ft.
Houston Oil Co.'s No. 13 P. H. Rooke ..... Gumbo 1,483 ft.; cmtd. 12½-in. csg.
Houston Oil Co.'s No. 7 Fannie Heard (workover) ..... Rig up to deepen.
Independent Oil & Gas Co.'s No. 2-C J. F. B. Heard ..... Rigging up.
Independent Oil & Gas Co.'s No. 1 Clint Heard ..... Derrick.
Independent Oil & Gas Co.'s No. 1 Mercy Academy ..... To make drill stem test 5,445-50 ft.
Independent Oil & Gas Co.'s No. 1 Helen Reilly ..... No report.
Independent Oil & Gas Co.'s No. 1 M. F. Lambert ..... Drlg. broken lime 5,513 ft.
Edwin M. Jones' No. 1-A Mitchell ..... Location.
Edwin M. Jones' No. 1 Jeter ..... Rigging up to pump; sand 3,681-96 ft.
Edwin M. Jones' No. 2-A Mitchell ..... Drlg. 2,712 ft.
Edwin M. Jones' No. 2-A J. F. B. Heard ..... Drlg. hard shale and boulders 3,360 ft.
Larco Co.'s No. 5 Strauch ..... Spudded.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Derrick.
Mission Drlg. Co.'s No. 1 Moss ..... Sand showing oil 6,408-16 ft.; cmtd. csg.
Mission Drilling Co.'s No. 1 Eliza Brown ..... Oil sand 3,670-95 ft.; cmtd. 9⅝-in. csg. 3,663 ft.
Mission Drilling Co.'s No. 1 Holmes Heard ..... Derrick.
Morgan Oil Corp.'s No. 1 St. Johns ..... Drlg. shale 4,380 ft.
Moody-Seagraves Prod. Co.'s No. 2 O'Brien ..... Drlg. hard sand 4,292 ft.
Moody-Seagraves Producing Co.'s No. 3 City ..... Derrick.
Morgan Oil Corp.'s No. 1 O'Connor ..... Gumbo 1,206 ft.; cmtd. 12½-in. csg.
Morgan Oil Corp.'s No. 2 O'Connor ..... Rig.
Morgan Oil Corp.'s No. 3 O'Connor ..... Gumbo 1,230 ft.; cmtd. 12½-in. csg.
Morgan Oil Corp.'s No. 4 O'Connor ..... Rig.
Pearson Properties, Inc.'s No. 2 Ryals ..... Sticky shale 479 ft.; cmtd. 10-in. csg.
Rutherford-Traylor Oil Co.'s No. 2 Cable ..... Rig.
Saxet Oil Co.'s No. 3 Cable ..... Drlg. sticky shale 3,205 ft.
Sun Oil Co.'s No. 4 Buckley ..... Comp. flowing 175 bbls. oil, quarter-inch choke, 3,663-87 ft.
Union Producing Co.'s No. 2 Lambert ..... Swabbing 5,891 ft.; well will not flow; standing 4,500 ft. fluid in hole.
Union Producing Co.'s No. 3 Lambert ..... Drlg. sticky shale 4,714 ft.
Union Producing Co.'s No. 4 Morgan-Vance ..... Rig.
Union Producing Co.'s No. 4 Morgan-Shelly ..... Gumbo 527 ft.; cmtd. 10-in. csg.
Union Producing Co.'s No. 3 O'Brien ..... Comp. flowing 300 bbls. daily 5,414-37 ft.; flow increased to 950 bbls.
Union Producing Co.'s No. 4 O'Brien ..... Set screen 5,427-46 ft.
Union Producing Co.'s No. 3 Powers ..... Coring shale 5,415 ft.
Union Producing Co.'s No. 4 Powers ..... Drlg. sticky shale 3,763 ft.
Union Producing Co.'s No. 2 Shelton ..... Drlg. sandy shale and lime 4,687 ft.
Union Producin Co.'s No. 3 Mitchell ..... Drlg. 5,300 ft.
Union Producing Co.'s No. 4 Mitchell ..... Drlg. 1,820 ft.
Union Producing Co.'s No. 9 Fannie Heard ..... Oil sand 3,647-61 ft.; set screen.

**SOUTH LOUISIANA FIELDS**

**LOCKPORT—CALCASIEU PARISH**

Vacuum Oil Co. and Gulf Ref. Co.'s No. 26 Miller ..... Drlg. gumbo 3,554 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 27 Miller ..... Drlg. gumbo 3,964 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Derrick.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 29 Miller ..... Moving in material.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 5 Freiberg & Wolf ..... Drlg. sandy shale 3,122 ft.
Vacuum Oil Co. & Gulf Producing Co.'s No. 7 Farquahar.. Rig.

**HACKBERRY—CAMERON PARISH**

Calcasieu Oil Co.'s No. 5 Caldwell ..... No report.
Calcasieu Oil Co.'s No. 18 Watkins ..... No report.
Duhon Oil & Mineral Co.'s No. 1 Duhon ..... Derrick.
Gulf Refining Co.'s No. 1 Erwin ..... Building derrick.
Sun Oil Co.'s No. 1 J. H. Duhon ..... Drlg. 3,301 ft.
The Texas Company's No. 7 State ..... Driving piling.
Yount Lee Oil Co.'s No. 10 School ..... Sidetracking.

**JENNINGS—ACADIA PARISH**

The Texas Company's No. 5 Rayne heirs, King tract .... Drlg. shale 8,060 ft.
Yount Lee Oil Co.'s No. 8 Houssiere-Latrielle, Section 47-9s-2w ..... T. D. 7,300 ft.; cmtd. 7-in. csg.

**VINTON—CALCASIEU PARISH**

Gulf Refining Co.'s No. 50 Star-Vincent ..... Drlg. 3,457 ft.

**BAYOU BOUILLON—ST. MARTIN PARISH**

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Rig.
Rycade Oil Corp.'s No. 10 Bouillon Fee ..... Derrick.

**STARKS—CALCASIEU PARISH**

Adams Oil Co.'s No. 1 Roderick ..... No report.
J. O. Davis' No. 1 Industrial ..... Standing 3,775 ft.
Gulf Refining Co.'s No. 22 Lutcher-Moore ..... Drlg. 706 ft.

**SWEET LAKE—CAMERON PARISH**

Pure Oil Co.'s No. 9 Yount Lee ..... Drlg. hard sandy lime.

**MISCELLANEOUS WILDCATS**

**TEXAS**

**AUSTIN COUNTY**

Black Oil Co.'s No. 1 Lancashire, near Sealey ..... Drlg. shale 3,300 ft.
Empire Gas & Fuel Co.'s No. 1 Boyd, San Felipe ..... Abandoned in anhydrite 4,110 ft.
O'Hara et al's No. 1 Batia, near Raccoon City ..... Fishing 4,000 ft.

**BRAZORIA COUNTY**

The Texas Company's No. 1 Ewin, Harvey Little Sur. ... Drlg. sticky shale 4,898 ft.
Mills Bennett Production Co.'s No. 1 Random, Allen .... Drlg. 9⅝-in. plug 4,877 ft.; coring sand and shale showing oil 4,938 ft.
Faust et al's No. 5 Faust ..... Sandy shale 4,083 ft.; cem. 6⅝-in. casing.
Layne et al's No. 6 Wisdom, Damon Mound ..... Location.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Shut down 1,185 ft.
Rycade Oil Corp.'s No. 1 Rapid City, Henry Austin Sur... Drlg. shale 4,604 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Salt 5,228-55 ft.; plugged to oil sand 1,667 ft.; waiting cement.
Shell Petroleum Corp.'s No. 2 Blakely Winston, Danbury.. Derrick.
Steel & Strickland's No. 1 Lockridge ..... Spudded.
United Oil Syndicate's No. 1 Moores, Francis Moore Sur.. Drlg. gumbo 549 ft.

**CHAMBERS COUNTY**

Chicago Oil Corp.'s No. 1 Lawrence ..... Drlg. sand and shale 3,810 ft.
Shell Petroleum Corp.'s No. 1 Herff, Moss Bluff ..... Drlg. sandy shale and lime 4,935 ft.
Pure Oil Co.'s No. 1 Kirby, Charles Tilton Survey ..... Drlg. sticky shale 3,246 ft.
Rycade Oil Corp. and Pure Oil Co.'s No. 1 Jackson, Oyster Bayou ..... Set 18⅝-in. csg. 41 ft.; drlg. sand and boulders 352 ft.
Superior Oil Corp.'s No. 1 Jackson ..... Shut down 350 ft.

**FORT BEND COUNTY**

Gulf Production Co.'s No. 2 Brazos, Clodine ..... Drlg. gumbo and lime 3,804 ft.

**GRIMES COUNTY**

John Deering's No. 1 Rossi, B.B.B.&C. Sur. ..... Drlg. shale 2,390 ft.

**HARDIN COUNTY**

D. O. Speights' No. 1 Fee, near Batson ..... Drlg. gumbo 1,010 ft.

**HARRIS COUNTY**

Baldwin and associates' No. 1 Kitzman, Cypress ..... Shut down 4,247 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Rorick, J. Ogburn Sur... Drlg. gumbo 2,410 ft.
Humble Oil & Ref. Co.'s No. 7 Warren, Hockley ..... Drlg. shale 5,699 ft.
Humble Oil & Ref. Co.'s No. 1 Siadous, Mykawa ..... Drlg. hard sand and shale 5,215 ft.
Humble Oil & Ref. Co.'s No. 2 Minnetex ..... Standing 1,216 ft.
Sloan Prospecting Co.'s No. 1 Davis, Cedar Bayou ..... Location.
Strang Oil Co.'s No. 1 Good, Deer Park ..... T. D. 3,240 ft.; derrick blown down.
Martin, Drake & Jones' No. 1 Haney ..... Drlg. sticky shale 5,276 ft.

**JACKSON COUNTY**

The Texas Company's No. 1 C. A. Mitchell, G. Ewing Sur. ..... Drlg. sandy shale and lime 2,578 ft.

**JEFFERSON COUNTY**

Gulf Production Co.'s No. 5 Burrell, Fannett ..... Drlg. shale 5,420 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Sidetracking from 5,164-84 ft.; T. D. 5,863 ft.
Westbury Oil Co.'s No. 1 West, Choate Sur. ..... Shut down 3,100 ft.

**LIBERTY COUNTY**

Gulf Production Co.'s No. 4 Boyt, Hankamer ..... Drlg. sticky shale showing oil 3,758 ft.
Gulf Production Co.'s No. 6 Boyt, Hankamer ..... Drlg. hard sand and boulders 1,600 ft.
Gulf Production Co.'s No. 1 A. E. Lee, Hankamer ..... T. D. 3,415 ft.; sidetracking 1,560 ft.
Gulf Production Co.'s No. 1 McFadden, Moss Bluff ..... Drlg. sticky shale and lime 3,928 ft.
Humble Oil & Ref. Co.'s No. 1 Sabine Tram, Devers ..... Drlg. hard shale and sand 2,028 ft.
Tucker et al's No. 1 Bell ..... Derrick

**MATAGORDA COUNTY**

Cockburn et al's No. 1 Hawkins, Shepherds, Mott ..... Drlg. sticky shale 5,497 ft.
Watts Oil Co.'s No. 1 Titus, Wheelright Sur. ..... Derrick.

**MONTGOMERY COUNTY**

Kelley-Kaker's No. 2 Guerges ..... Shut down 1,915 ft.

**ORANGE COUNTY**

Gulf Production Co.'s No. 1 W. H. Starks, Port Neches .. Drlg. gumbo and lime 2,276 ft.
The Texas Company's No. 2 Kuhn, Port Neches ..... Drlg. sticky shale 2,992 ft.
The Texas Company's No. 2 Stark, Port Neches ..... Drlg. shale 3,628 ft.

**WALLER COUNTY**

Kirby Petroleum Co.'s No. 2 Davis, San Felipe ..... Drlg. sandy lime 3,060 ft.
W. P. Morris' No. 1 Chapman, Donoho Sur. ..... Shut down 2,075 ft.

**WASHINGTON COUNTY**

W. Birdwell's No. 1 Schram, James Walker Sur. ..... Shut down 2,110 ft.
Clifton et al's No. 1 Pruiss, E. Alcorn Sur. ..... Rig.
Mid-Kansas Oil & Gas Co.'s No. 1 Johnke, A. Miller Sur. ..... Drlg. shale 1,462 ft.
Sun Oil Co.'s No. 9 Grote, Clay Creek ..... Drlg. sand and shale 1,673 ft.
Sun Oil Co.'s No. 2 Janner, Clay Creek ..... Comp. flowing 75 bbls. oil 1,238 ft.
Sun Oil Co.'s No. 4 Clay, Clay Creek ..... Drlg. gumbo 800 ft.

Sun Oil Co.'s No. 5 Hunt, Clay Creek ..... Location.

**SOUTH LOUISIANA**
**ACADIA PARISH**

Calcasieu Oil Co.'s No. 1 Hays, Sec. 10-8s-1w ..... No report.
Charles P. Siess' No. 1 Lyons, Sec. 4-10s-1e ..... Location.

**CALCASIEU PARISH**

Wilfred Lahay's No. 2 James ..... Standing 3,775 ft.

**CAMERON PARISH**

Shell Petroleum Corp.'s No. 12 Watkins, Black Bayou ... Set screen 5,321 ft.
Shell Petroleum Corp.'s No. 15 Watkins, Black Bayou ... Location.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Preparing to set casing and screen 3,800 ft.

**IBERIA PARISH**

The Texas Company's No. 5 Vermillion Bay ..... Building derrick.

**IBERVILLE PARISH**

Shell Petroleum Corp.'s No. 4 Wilbert, White Castle ..... Cmtd. 9⅝-in. csg. 5,175 ft.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Tested salt water 2,088 ft.; pulling screen.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue ..... Location.
Standard Oil Co.'s No. 6 Wilbert, Bayou Blue ..... Salt 3,026 ft.; to test sand at 1,975 ft.
Standard Oil Co.'s No. 1 Case, Bayou Des Glaise ..... Drill stem stuck 3,168 ft.
Standard Oil Co.'s No. 2 Case, Bayou Des Glaise ..... Location.

**JEFFERSON PARISH**

Humble Oil & Refining Co.'s No. 1 Delaware, Sec. 2-16s-23e ..... Building derrick.

**JEFFERSON DAVIS PARISH**

Shell Petroleum Corp.'s No. 1 Heyd, Iowa ..... Rigging up.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh ..... Drlg. 2,305 ft.
Yount Lee Oil Co.'s No. 1 Abbott, Welsh ..... Drlg. 2,150 ft.

**LA FOURCHE PARISH**

The Texas Company's No. 1 Leesville ..... Drlg. gumbo 3,354 ft.

**PLAQUEMINE PARISH**

Humble Oil & Ref. Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... No report; T. D. 5,115 ft.; waiting 7-in. csg.
The Texas Company's No. 4 State, Garden Island Bay ... No report.

**ST. LANDRY PARISH**

Herbert-Baker Oil Co.'s No. 1 Fisher, Sec. 10-3S-4e ..... No report.
Gulf Refining Co.'s No. 2-A Hoskins, Port Barre ..... T. D. 3,600 ft.; plugged to 3,398 ft.; waiting cement.
Gulf Refining Co.'s No. 3 Lahaye, Port Barre ..... Drlg. 241 ft.
Alex Rice's No. 1 Futral, Port Barre ..... Drlg. 1,329 ft.
The Texas Company's No. 7 Botney Bay, Port Barre ... Sandy shale showing oil 3,400 ft.; cemented casing.
The Texas Company's No. 8 Botney Bay, Port Barre ... Location.

**ST. MARY PARISH**

Pure Oil Co.'s No. 2 Wax Lake, Sec. 12-17s-9e ..... Gummy shale 3,068 ft.; fishing pipe.

**TERREBONNE PARISH**

Charles Paggi's No. 2 Evergreen, Sec. 14S-15e-16e ..... No report.
The Texas Company's No. 4 State-Bay St. Elaine ..... Sand showing oil 5,198 ft.
The Texas Company's No. 1 La. L. & E. Co., Bay Junope.. Drlg. sand 2,384 ft.
The Texas Company's No. 2 State, Lake Pelto ..... Drlg. water sand 2,884 ft.
The Texas Company's No. 3 State, Caillou Island ..... Rig.
The Texas Company's No. 4 State, Lake Barre ..... Derrick.
The Texas Company's No. 2-A State, Dog Lake ..... Drlg. gumbo 2,859 ft.

## OKLAHOMA FIELDS

(Continued from Page 58)

wells have a potential production of 25,970 bbls.

Wells drilled to the north offsetting the big producer found the lower formations had thickened, which resulted in small production, giving indications that the trend of the pool may be in a SE and NW direction, if any. The difference in the size of the output of the wells is due to the structural conditions. The large well is apparently on a sharp nose, while those to north are down on the structure.

The gas and oil ratio in the field is between 500 and 600 cubic feet per barrel. Twenty-five pounds of back pressure will cause a well to stop flowing.

In the old Earlsboro Pool some of the wells show a total recovery of over 1,000,000 bbls. Amerada Petroleum Corp.'s No. 2 in the SW cor. NW NW Section 15-9-5, has produced 1,200,000 bbls. of oil and The Texas Company's No. 1 Rogers, SE cor. Section 5-9-5, has made over 1,000,000 bbls.

The following table shows the completed wells in the South Earlsboro Pool, and their gauges as of May 16:

| Company, lease— | S-T-R | Wells | Prod. |
|---|---|---|---|
| Amerada: | | | |
| I. Ground | 22-9-5 | 3 | 9,505 |
| J. Grounds | 23-9-5 | 2 | 15,235 |
| Dixie: | | | |
| Lena | 15-9-5 | 2 | shut in |
| Gypsy: | | | |
| Carbitcher | 14-9-5 | 1 | shut in |
| H. Micco | 14-9-5 | 2 | shut in |
| Magnolia: | | | |
| Carbitcher | 14-9-5 | 1 | 240 |
| Grounds | 23-9-5 | 2 | 464 |
| Mid-Continent: | | | |
| Grounds | 23-9-5 | 1 | 10 |
| Prairie: | | | |
| Grounds | 23-9-5 | 1 | shut in |
| Sinclair: | | | |
| Jones | 15-9-5 | 1 | 515 |
| Tulsa: | | | |
| Gross | 24-9-5 | 1 | 243 |
| Total | | 17 | 26,212 |

### Busy Week in Pontotoc

Pontotoc County had 10 completions and 6 new locations during the week. The completions were distributed in different parts of the county, with the Beebe Pool in the lead.

American Oil & Refining Co.'s No. 6 Robertson, NW cor. SE, Section 19-5-5, made 150 bbls. from a total depth of 2,462 feet. Benedum-Trees Oil Co.'s No. 2 Malloy, in Section 30-5-5, was completed for 200 bbls. at a total depth of 2,630 feet. B. A. LaSalle's No. 1 Malloy, NE cor. SE SE, Section 30-5-5, was plugged back from 2,375 feet to 1,498-1,507 feet, where the casing was ripped and it was completed for 5,000,000 feet of gas. Benedum-Trees Oil Co.'s No. 2 Coker, in Section 31-5-5, made 200 bbls. on the pump from a total depth of 2,622 feet. Same company's No. 8 Mole, NW cor. NE, Section 31-5-5, did 125 bbls. on the pump from a total depth of 2,646 feet. Denver Producing & Refining Co.'s No. 2 Stafford, SW cor. NW, Section 31-5-5, made 95 bbls. on the pump from a total depth of 2,662 feet. Benedum-Trees Oil Co.'s No. 1 Burke, NE cor. NW NW, Section 33-5-5, made 155 bbls. from the Hunton lime at 2,204 feet, the total depth being 2,357 feet. Dixie Oil Co.'s No. 3 Haynes, NW cor. NE SW, Section 32-5-5, at a total depth of 2,498 feet, pumped 220 bbls. Same company's No. 1 Roper, in Section 32-5-5, was shot with 40 quarts at 2,540-60 feet and made 155 bbls. Homaokla Oil Co. and Sunray Oil Corp.'s No. 8 Ritchie, SE cor., Section 12-4-7, Pontotoc County, swabbed 195 bbls. from a total depth of 1,978 feet.

### Wanette Activity

The Wanette-Asher area in southern Pottawatomie County, is in the limelight and an active leasing campaign is in progress in the adjoining areas together with new development surrounding the Payne Drilling Co. and Bullock's discovery well. The discovery well has been flowing an average of 850 bbls. a day for the last four weeks from an unidentified horizon at 3,505-10 feet, after plugging back from the Wilcox sand where a hole full of water was found. The next well expected to reach the pay reservoir in the area is the Wilcox Oil & Gas Co.'s No. 1 Atkins, NW cor. SW, Section 23-6-3. It was coring at 3,420 feet. Transcontinental Oil Co.'s No. 1 Miller, SE cor. NE NE, Section 23-6-3, was drilling deeper at 1,875 feet; Twin State Oil Co.'s No. 1 Neal, NE cor. SE, Section 22-6-3, drilling at 2,100 feet; Indian Territory Illuminating Oil Co.'s No. 1 Davidson, SW cor. NW, Section 23-6-3, drilling at 2,900 feet; No. 2 Davidson, drilling ahead at 1,500 feet; Prairie Oil & Gas Co.'s No. 1 Crier, SW cor. NW NW, Section 23-6-3, resumed drilling at 1,500 feet, after cementing casing at 1,420 feet; J. A. Hull's No. 1 Townsend, NE cor. SE SE, Section 22-6-3, expecting to spud in a few days.

### In the Konawa Pool

The Konawa Pool had another completion during the week when the Mid-Continent Petroleum Corp.'s No. 1 Harjo, NE cor. SW SE, Section 20-6-6, Seminole County, flowed 3,985 bbls. in 19 hours, flowing wide open. The oil was found in sand at 2,866-99 feet. The potential production of Konawa Pool is estimated at 45,000 bbls. with the present completions. The average daily production from the pool is around 19,000 bbls. a day. Most of the output at this time is coming from the new wells, many of the producers are being reported shut in for proration. Twin State Oil Co.'s No. 2 Charlie, SW cor. NE NE, Section 20-6-6, flowed 4,110 bbls. wide open on the gauge of May 17.

### Southern Oklahoma

Southern Oklahoma was quiet during the week. The Madill Pool, in Marshall County shows the most activity, this being a shallow area. Westheimer & Daube's No. 4 Sullivan-Davison, SW cor. NE SE NW, Section 30-5s-5, a new producer in the pool, made an initial gauge of 60 bbls. in 12 hours from sand at 637-52 feet. Bilbo Oil Trust Corp.'s No. 5 Null, NW cor. SW NE NW, Section 24-5s-5, is estimated at 70 bbls. daily from sand at 656-60 feet.

In Carter County, Venmex Oil Co.'s No. 1 Keener, SW cor. NW SE, Section 29-1s-3w, on the west edge of production, is being standardized. It is estimated at 50 bbls. a day from a total depth of 4,100 feet.

In the Palacine Pool in Stephens County, Wirt Franklin Petroleum Corp.'s No. 1 Hartley, NW cor. SW SW, Section 10-2s-6w, made 105 bbls. in 24 hours from sand at 2,867-76 feet.

The Walters Field in Cotton County has three new completions. Development work has slowed down while operators rebuild derricks lost in the tornado of the previous week. Shasta Oil Co.'s No. 7 Burneaugh, C S half NW SE, Section 2-2s-10w, was completed for 200 bbls. from sand at 2,197-2,212 feet. Same company's No. 14 Slogan, SE cor. NE NE, Section 2-2s-10w, was pumping 45 bbls. from sand at 2,179-96 feet. Same operators' No. 10 Patterson, NE cor. SW NW, Section 1-2s-10w, was also completed making 40 bbls. from 2,203-18 feet.

### Standardizing at 8,780 Feet

In northwestern Oklahoma the Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW, Section 14-26-24w, Harper County, the deepest drilling test in the State was rigging up standard tools at a total depth of 8,780 feet. Operators believe the test is still in the Mississippi lime, and has been drilling in that formation for the last 1,700 feet. It is the thickest section of Mississippi lime ever drilled in the State of Oklahoma to the present time.

### Oklahoma City's Shut-In Production

The initial shut-in production from the Oklahoma City Pool that has been allowed to produce for 24 hours or less as of May 17 was 410,086 bbls. The initial production of the wells and the dates each will be opened for its regular producing period follows:

| Company, lease— | Well No. | Bbls. | Date |
|---|---|---|---|
| I. T. I. O.: | | | |
| Watters | *3 | 2,204 | ..... |
| Jones | *4 | [1]1,954 | 5-18-30 |
| Butterfield | *1 | [2]3,264 | 5-17-30 |
| Pasadena-Heights | *1 | [3]5,932 | 5-16-30 |
| Jones | *4 | [4]1,594 | 5-18-30 |
| Fortson-Farley | 2 | [5]15,272 | 5-20-30 |
| N. Emerson | *3 | [6]2,204 | 5-19-30 |
| E. Fortson | 2 | [7]3,364 | 5-19-30 |
| L. Farley | 1 | [8]19,883 | 5-21-30 |
| A. Bodine | 7 | [9]609 | 5-20-30 |
| Wilke-Anderson | *1 | 381 | 6- 1-30 |
| Sudik | *1 | [10]30,000 | ..... |
| Unsell-Krager | *3 | [11]4,804 | 6- 9-30 |
| M. Fuzzell | 2 | [12]1,673 | 6- 9-30 |
| M. Sudik | *2 | [13]1,939 | 6-14-30 |
| M. Unsell | *1 | [14]3,199 | 6-12-30 |
| L. Jones | *6 | [15]5,092 | 6-17-30 |
| Ferndale | *1 | [16]4,933 | 6-19-30 |
| M. Knox | *1 | [17]4,052 | 6-17-30 |
| Warner-Farley | *2 | [18]960 | 6-20-30 |
| W. Canfield | *2 | [19]166 | 6-20-30 |
| Jones | *5 | 5,200 | 6-29-30 |
| Warden | *1 | 6,758 | 7- 1-30 |
| Werner-Farley | *3 | [20]2,096 | 7- 2-30 |
| Werner-Speegle | *3 | [21]2,355 | 7- 2-30 |
| H. W. Jones | *1 | [22]13,129 | 7- 4-30 |
| Borden | *1 | [23]2,080 | 7- 5-30 |
| E. Farley | *1 | [24]104 | 7- 5-30 |
| Salaman | *2 | 4,205 | 7- 8-30 |
| C. Brokaw | *4 | [25]435 | 7- 6-30 |
| Ferndale Comm. | *2 | [26]4,142 | 7- 7-30 |
| N. Emerson | *5 | [27]2,830 | 7-12-30 |
| H. W. Jones | *2 | [28]12,290 | 7-13-30 |
| E. Trosper | *2 | [29]15,000 | 7-13-30 |
| B. Johnson | *4 | [30]2,334 | 7-13-30 |
| N. Emerson | *3 | [31]4,052 | 7-14-30 |
| N. Emerson | *10 | [32]855 | 7-15-30 |
| C. E. Trosper | *1 | [33]5,637 | 7-16-30 |
| L. Jones | *3 | [34]165 | 7-20-30 |
| W. Franklin: | | | |
| Lowery | *6 | [35]6,339 | 5-19-30 |
| Theimer | *1 | [36]7,896 | 5-17-30 |
| Eacock | *1 | [37]6,835 | 6- 1-30 |
| Lowery | *5 | [38]5,599 | 6-13-30 |
| Hoopes | *4 | 6,396 | 6-12-30 |
| Cromwell: | | | |
| Trosper Park | *10 | [39]9,015 | 5-21-30 |
| Trosper Park | *18 | [40]1,902 | 7- 7-30 |
| Sinclair: | | | |
| Vincl | *1 | 14,005 | 5-17-30 |
| School Land 54 | *2 | [41]5,235 | 5-21-30 |
| Vincl | *4 | [42]2,385 | 7- 5-30 |
| Sinclair et al: | | | |
| Kinter | *4 | [43]5,000 | 5-19-30 |
| Kinter | *5 | 255 | 5-28-30 |
| Kinter | *7 | [44]630 | 5-29-30 |
| Vincl | *4 | [45]2,385 | 3- 5-30 |
| Coline: | | | |
| Warren | 7 | [46]15,000 | 6- 1-30 |
| Clauer | *2 | 5,130 | 5-23-30 |
| Olds | *9 | [47]1,169 | 6- 7-30 |
| Olds | *7 | [48]819 | 6- 8-30 |
| Warren | *3 | [49]6,914 | 6-30-30 |
| Slick: | | | |
| Hoopes | *1 | 9,284 | 5-17-30 |
| Hoopes | *2 | [50]8,758 | 5-20-30 |
| Hoopes | *5 | [51]815 | 7- 6-30 |
| Hoopes | *6 | [52]1,617 | 7- 8-30 |
| Heenan & Co.: | | | |
| Cunningham | *1 | [53]6,904 | 5-30-30 |
| Skelly: | | | |
| Hoopes | *3 | [54]322 | 6- 4-30 |
| L. Jones | *3 | [55]5,093 | 6-14-30 |
| Dunn | *1 | 19,580 | 6-28-30 |
| Hoopes | *2 | [56]1,846 | 6-30-30 |
| Hoopes | *5 | [57]2,514 | 7- 1-30 |
| Hoopes | *7 | [58]1,954 | 7- 1-30 |
| Hoopes | *4 | [59]4,976 | 7- 2-30 |
| Hoopes | *6 | [60]441 | 7- 7-30 |
| Mid-Kansas: | | | |
| Mollan | *2 | 2,492 | 6- 6-30 |
| Mollman | *3 | [61]1,726 | 7- 3-30 |
| Tom Slick Oil Co.: | | | |
| Bailey | *1 | 16,758 | 6-27-30 |
| Houghton | *1 | [62]8,873 | 6-27-30 |
| Hall & Briscoe: | | | |
| Lindsey | *1 | [63]5,186 | 7- 2-30 |
| Total | 77 | 410,086 | |

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime.

[1]Estimated. [2]Thirteen hours. [3]Seven hours. [4]Twelve hours. [5]Five hours. [6]Eighteen hours. [7]Seventeen hours. [8]Twenty and one-half hours. [9]Twenty-one hours. [10]Nineteen hours. [11]Twenty-three and one-half hours. [12]Eight and one-half hours. [13]One hour. [14]Six and one-third hours. [15]Eighteen and one-quarter hours. [16]Sixteen hours. [17]Three hours. [18]Thirty-five minutes. [19]Fourteen and one-quarter hours. [20]Nine and three-quarter hours. [21]Six hours.

These notations indicate the number of hours the wells produced on their initial production test.

### Actual Field Production

The actual field production from the Oklahoma City Pool is shown in the table below, which gives the dates, number of barrels of oil produced, number of wells producing and total number of wells completed in the pool, on the various days:

| Day— | Bbls. | Wells prod. | Total completed wells |
|---|---|---|---|
| May 13 | 135,546 | 57 | 228 |
| May 14 | 135,587 | 57 | 228 |
| May 15 | 85,820 | 48 | 230 |
| May 16 | 97,597 | 45 | 230 |
| May 17 | 153,264 | 57 | 233 |
| May 18 | 119,568 | 50 | 233 |
| May 19 | 120,549 | 44 | 235 |

### Oklahoma City Shipments

The daily average pipe line and tank car shipments from the Oklahoma City Pool, averaged 122,813 bbls. daily for the week ending May 12. The total shipments for the same seven days by companies were as follows:

| Company— | Bbls. | Dly. av. |
|---|---|---|
| Empire | 145,225 | 20,746 |
| I. T. I. O. | 56,237 | 8,034 |
| Magnolia | 91,598 | 13,085 |
| Oklahoma | 138,032 | 19,719 |
| Prairie | 171,101 | 24,443 |
| Shell | 24,397 | 3,485 |
| Sinclair | 133,511 | 19,072 |
| Tidal | 99,594 | 14,228 |
| Total | 859,695 | 122,813 |

### Greater Seminole Production

Production from the Greater Seminole area was increased approximately 19,000 bbls. for the week ending May 12. The Seminole area averaged 199,628 bbls. from 1,852 wells. The daily average gauges for the Greater Seminole area for the same seven days were as follows:

| Pool— | Wells | Bbls. |
|---|---|---|
| Little River | 365 | 38,901 |
| East Little River | 70 | 15,145 |
| Carr City | 57 | 11,109 |
| Maud | 137 | 5,425 |
| Mission | 104 | 15,270 |
| Bowlegs | 252 | 13,281 |
| Earlsboro | 301 | 42,622 |
| East Earlsboro | 151 | 36,131 |

| Pool— | Wells | Bbls. |
|---|---|---|
| Seminole | 266 | 16,494 |
| East Seminole | 33 | 2,938 |
| Searight | 86 | 12,312 |
| Allen | 359 | 16,430 |
| Asher | 26 | 2,100 |
| Konawa | 48 | 18,424 |
| St. Louis | 485 | 43,354 |
| Sasakwa | 53 | 9,833 |
| Total | 2,723 | 289,769 |

**Seminole Oil Shipments**

Oil shipments from the Seminole area for the seven days ending May 12, including the pipe line and tank cars, averaged 208,529 bbls. daily. The shipments exceed production by approximately 9,000 bbls. daily. The daily average shipments by companies were as follows:

| Company— | Bbls. |
|---|---|
| Barnsdall | 2,843 |
| Champlin | 1,985 |
| Continental | 786 |
| Consolidated | 272 |
| Cosden | 8,025 |
| Deep Rock | 4,973 |
| Empire | 2,325 |
| Gulf | 23,910 |
| Magnolia | 14,201 |
| Oklahoma | 25,300 |
| Prairie | 19,763 |
| Producers & Refiners | 2,645 |
| Pure | 4,878 |
| Shell | 11,348 |
| Sinclair | 50,778 |
| Texas | 13,310 |
| Tidal | 14,464 |
| White Oak | 1,937 |
| Total | 201,743 |
| Tank cars | 6,786 |
| Grand total | 208,529 |

**Bryan County**

Slab Oil Co.'s No. 1 Ryle, NW cor. SE SE, Section 27-6s-7, has been abandoned at 1,500 feet.

**Carter County**

Trevelyn Oil Co.'s No. 2 Spigner, NE cor. SW NW, Section 24-1s-3w, has been completed for 380 bbls. in broken sands 2,316-2,508 feet. The Prairie Oil & Gas Co.'s No. 2 McCartney, SE cor. NW SE, Section 30-1s-3w, has been abnadoned at 2,650 feet.

**Cotton County**

Harris & McNeal made location for No. 1 Smith, NW cor. SE, Section 34-1s-10w. Location has also been made for No. 1 Shackelford, NE cor. SW, Section 34-1s-10w. No. 4 Chambers, SW cor. NW SW, Section 1-2s-10w, is drilling at 50 feet. Baldwin & Sultan's No. 4 Patterson, NW cor. SW NW NW, Section 1-2s-10w, has cemented pipe at 2,188 feet. No. 5 Patterson, NW cor., Section 1-2s-10w, is a location. Shasta Oil Co. has the rig up for No. 11 Patterson, C SW NW, Section 1-2s-10w. No. 14 Slogan, SE cor. NE SE NE, Section 2-2s-10w, has cemented 6-inch casing at 2,182 feet and drilling plugs. No. 8 Burneaugh, CNL NE SE, Section 2-2s-10w, is drilling at 1,875 feet. No. 9 Burneaugh, SE cor. NE SE, Section 2-2s-10w, is a rig. Baldwin & Sultan's No. 3 Patterson, SE cor. NW NW, Section 1-2s-10w, has been completed for 40 bbls. in sand 2,202-19 feet. Harris & McNeal's No. 4 Chambers, NW cor. SW, Section 1-2s-10w, is pumping 60 bbls. from sand 2,187-2,206 feet after swabbing 100 bbls. Shasta Oil Co.'s No. 10 Patterson, NE cor. SW NW, Section 1-2s-10w, has been completed for 40 bbls. in sand 2,203-19 feet. No. 2 E. Chambers, CNL S half NW SW, Section 1-2s-10w, is pumping 40 bbls. from sand 2,200-19 feet. No. 6 Burneaugh, NE cor. SE NE SE, Section 2-2s-10w, has been completed for 75 bbls. in sand 2,197-2,216 feet. No. 13 Slogan, SE cor. NE NE, Section 2-2s-10w, made 75 bbls. in sand 2,179-2,203 feet. No. 2 Burneaugh, SE cor. NE SE, Section 2-2s-10w, has been completed for 90 bbls. in sand 2,168-93 feet. No. 5 Cobb, NE cor. SE NE, Section 2-2s-10w, has been completed for 100 bbls. in sand 2,174-2,200 feet.

**Coal County**

Blackwell Oil & Gas Co. made location for No. 1 Gumm Brothers, NW cor., Section 26-3-9.

**Grady County**

Meridian Gas Co. has the rig up for No. 1 Miller, NE cor. NW NW, Section 31-4-7w. Oklahoma Gas Utilities Co.'s No. 1 Warren, SE cor. NE NW NW, Section 36-4-8w, has been completed for 7,000,000 feet of gas in sand 2,112-82 feet.

**Marshall County**

J. H. Hudson and others' No. 1 Wilson, SE cor. NW NW, Section 10-5s-5, is dry and abandoned at 720 feet.

**Oklahoma County**

Wirt Franklin Petroleum Corp. made location for No. 2 Page, SW cor. SE, Section 35-12-3w. Mid-Kansas Oil & Gas Co. has the cellar dug for No. 1 M. Cornwell, SE cor. SW, Section 18-12-1w, Oklahoma City Field. Tom Slick Oil Co. and Atkinson made location for No. 1 Trumbley, NW cor. NE SW, Section 2-11-3w. Location has also been made for No. 1 Alexander, SE cor. NE SW, Section 2-11-3w. Century Petroleum Co. has made location for No. 1 Jefferson, NE cor. SW NE NE, Section 2-11-3w. Capitol Producing Co. has the cellar dug for No. 1 Trust, CSL NW NW NW, Section 2-11-3w. Champlin Oil & Refining Co. made location for No. 1 McKeehan, NE cor. NW NE, Section 2-11-3w. Wirt Franklin Petroleum Corp. made location for No. 2 Wright, NW cor. NE NW, Section 2-11-3w. No. 3 Wright is a location, NE cor. NW NW, Section 2-11-3w. Location has been made for No. 10 Theimer, NW cor. SE, Section 2-11-3w. Indian Territory Illuminating Oil Co. made location for No. 1 E. Precure, SW cor. SE SE, Section 11-11-3w. Location has been made for No. 2 Corff, SW cor. SE SW, Section 11-11-3w. No. 4 Hugh Trosper is a location, NW cor. NE NE, Section 14-11-3w. Location has also been made for No. 5 Hugh Trosper. SE cor. NW NE, Section 14-11-3w. Location for No. 3 Clarence Trosper, SW cor. NW NE, Section 14-11-3w, has been made. Location has been staked for No. 2 Spillman, NE cor. NW SE, Section 14-11-3w. Julian Oil Royalty Co. made location for No. 1 Shepherd, SE cor. NE NE NW, Section 14-11-3w. Indian Territory Illuminating Oil Co. made location for No. 1 Mount Vernon Heights, NE cor., Section 15-11-3w. L. C. Hivick is erecting the rig for No. 1 Sunset Addition, NW cor. SW NW, Section 17-11-3w. Indian Territory Illuminating Oil Co. made location for No. 1 E. Williams, NE cor. SE NE NW, Section 23-11-3w. No. 3 Mary Unsell, SW cor. NW NE, Section 23-11-3w, is a location. Indian Territory Illuminating Oil Co. made location for No. 5 Peterson, NW cor. NE SW, Section 25-11-3w. Location has also been made for No. 6 Peterson, NW cor. SE SW, Section 25-11-3w. Location for No. 7 Peterson, SW cor. SE SW, Section 25-11-3w, has been made. No. 7 Johnson, NE cor. SE NW, Section 25-11-3w, is a location. Location has been made for No. 8 Johnson, SW cor. SE NW, Section 25-11-3w.

Indian Territory Illuminating Oil Co.'s No. 2 Ferndale Community, SE cor. NE, Section 11-11-3w, has been completed for 4,142 bbls. in 12 hours in sand 6,202-6,539 feet. Cromwell-Franklin Oil Co.'s No. 18 Trosper Park, SW cor. NW SW, Section 12-11-3w, made 14,428 bbls. in sand topped at 6,337 feet, total depth 6,403 feet. Wirt Franklin Petroleum Corp.'s No. 5 Lowery, NW cor., Section 12-11-3w, has been completed for 9,722 bbls. in sand 6,430-6,510 feet. Indian Territory Illuminating Oil Co.'s No. 4 C. Brokaw, NE cor. SE NE, Section 13-11-3w, made 4,639 bbls. in 12 hours from Arbuckle lime 6,082-6,404 feet. No. 1 Borden, NE cor. SE SE, Section 23-11-3w, has been completed for 2,080 bbls. in 12 hours in sand topped at 6,305 feet, total depth 6,599 feet. Mid-Kansas Oil & Gas Co.'s No. 1 C. E. Trosper "A," SE cor. NE SE, Section 24-11-3w, is dry and abandoned at 7,375 feet. Coline Oil Co.'s No. 3 Clauer, SE cor., Section 25-11-3w, has been deepened from 6,499 feet to 6,514 feet and made 6,069 bbls. Tom Slick Oil Co.'s No. 3 Hoopes, SE cor. SW NE, Section 31-11-2w, made 9,284 bbls. in sand topped at 6,383 feet, total depth 6,619 feet. Skelly Oil Co.'s No. 6 Hoopes, NE cor., Section 31-11-2w, has been completed for 2,058 bbls. in sand 6,306-85 feet. Sinclair Oil & Gas Co.'s No. 4 Vincl, NW cor. NE SE, Section 31-11-2w, made 4,820 bbls. in 12 hours from sand 6,360-41 feet. Indian Territory Illuminating Oil Co.'s No. 2 Salesman, SW cor. NW, Section 32-11-2w, has been completed in sand 6,295-6,506 feet for 4,205 bbls.

**Osage County**

The Texas Company and the Prairie Oil & Gas Co.'s No. 5, NW cor. NE SW, Section 30-25-8, is rigging up. Peters Petroleum Corp. and Producers & Refiners Corp. made location for No. 1, NW cor., Section 15-25-9. J. H. Alexander and others staked location for No. 3, SW cor., Section 36-25-11. Peters Petroleum Corp. is erecting the rig for No. 6, NE cor. NW SW, Section 32-24-9. Barnsdall Oil Co. and others' No. 1, CEL W half NE, Section 27-22-11, is a rig. The rig is up for No. 1, SW cor. NW SW, Section 34-22-11.

Smith Leahy and others' No. 1, SW cor., Section 10-25-9, has been completed for 10 bbls. at 2,098 feet after plugging back from 2,146 feet. Indian Territory Illuminating Oil Co.'s No. 427, NE cor. SE SE NE, Section 6-25-11, has been completed for 3,000,000 feet of gas in lime 1,857-68 feet. Kay County Gas Co.'s No. 1, CNL SW SW, Section 28-24-4, has been abandoned at 3,960 feet. Continental Oil Co.'s No. 1, NW cor. SE SE, Section 24-24-5, is dry and abandoned at 3,549 feet. J. D. Gray's No. 2, NW cor. NE, Section 3-23-8, is pumping 15 bbls. at 2,316 feet since plugging back from 2,533 feet. Peters Petroleum Corp. and Producers & Refiners Corp.'s No. 1, SW cor. NE, Section 5-22-8, is dry and abandoned at 3,100 feet. Pueblo Petroleum Co.'s No. 1, NE cor. NW NW, Section 14-21-8, is making 45 bbls. at 2,285 feet after plugging back from 2,289 feet.

**Pawnee County**

Indian Territory Illuminating Oil Co. has dug the cellar for No. 10, SE cor. SW NW, Section 6-20-8.

**Pontotoc County**

American Oil & Refining Co.'s No. 6 Robertson, SE cor. SW, Section 19-5-5, Bebee Pool, has been completed for 150 bbls. in sand 2,412-62 feet. Benedum-Trees Oil Co.'s No. 2 Malley, SW cor., Section 30-5-5, made 200 bbls. in Viola lime 2,441-2,630 feet. No. 2 Coker, NW cor., Section 31-5-5, has been completed for 150 bbls. in Viola lime 2,484-2,622 feet. No. 8 Mole, SE cor. NW NE, Section 31-5-5, made 150 bbls. in Viola lime 2,453-2,646 feet. Dixie Oil Co.'s No. 1 Roper, NW cor. SE NW, Section 32-5-5, has been completed for 160 bbls. in Simpson sand 2,540-54 feet.

**Stephens County**

Magnolia Petroleum Co.'s No. 6 M. Green, NE cor. NW, Section 13-1s-4w, is drilling at 2,200 feet. George Pace and others' No. 3 Wilson, SW cor. NW NW, Section 20-2s-7w, is drilling at 200 feet. Pace and others' No. 6 Watkins, SW cor. NE SE, Section 21-2s-7w, is drilling at 150 feet . Wirt Franklin Petroleum Corp.'s No. 1 Mullen, SE cor. NE SE, Section 9-2s-6w, has been abandoned at 3,000 feet.

**Creek County**

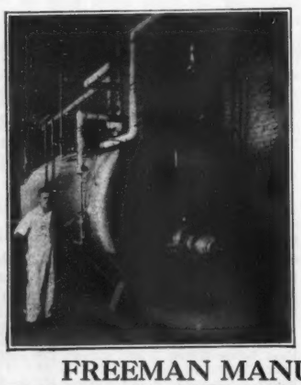
J. W. Merritt and others' machine is on the location for No. 1 Pine, SW cor. NE NE, Section 27-18-8. Jackson & Wise's No. 1 Grayson, NE cor. SE SE, Section 20-18-9, is drilling deeper at 2,920 feet. Amerada Petroleum Corp., Dixie Oil Co. and Curtis Oil Co. moved the rig in for No. 1 Whitenbeck, NE cor. SW, Section 21-16-8. Twin State Oil Co.'s No. 1 Orcutt, SW cor. SE, Section 22-16-9, is an old well drilling deeper at 3,300 feet. Olean Petroleum Co.'s No. 5-A Bigpond, NE cor., Section 36-15-7, is drilling at 100 feet. A. A. Bailey and others' No. 1 Foster, NW cor. NE, Section 19-19-9, is dry and abandoned at 3,105 feet. Quackenbush and others' No. 1-A McIntosh, C NE NW, Section 26-18-7, has been completed for 5,500,000 feet of gas in sand 2,048-93 feet. Independent Oil & Gas Co. and others' No. 1 Davis, SE cor. NW SE, Section 20-18-8, has been abandoned at 3,651 feet. C. H. Deitz and Gilpin's No. 2 Goat, NW cor. SW SE, Section 31-18-11, is dry and abandoned at 2,156 feet. Chesnut & Smith's No. 1 Bolin, SE cor. NW SW, Section 27-17-12, has been completed for 1,500,000 feet of gas in sand 1,765-76 feet. Transcontinental Oil Co.'s No. 1 Humphrey, SW cor. NE, Section 15-16-9, has been completed for 15 bbls. in sand 2,989-3,005 feet. Operators Oil Co.'s No. 1 Thompson, NE cor. SE, Section 26-16-10, is dry and abandoned at 2,695 feet. George Whittman and others' No. 1 Smith, NE cor. NW SW, Section 11-14-10, has been completed for 5,000,000 feet of gas in sand 2,590-2,605 after plugging back from 3,210 feet.

**Muskogee County**

Mack Drilling Co. moved the machine in for No. 3 D. Richards, CSL NW NE, Section 33-16-15. Babcock Brothers' machine is on the location for No. 8 N. Barnett, CSL SW NE, Section 8-15-15. William LaPierre has a machine on the location for No. 1 W. Mickens, SW cor. NW NW, Section 11-15-18. Allred and others' No. 1 R. Drew, SE cor. SW NE, Section 17-13-16, is a machine. Mid-Western Oil & Gas Co.'s No. 1 Mulkey, C SW SW, Section 30-12-19, is a location. C. O. Buckles' No. 6 M. Barnett, CNL NE SE, Section 8-15-15, has been completed for 20 bbls. in sand 1,650-83 feet. T. E. Wheeler and others' No. 1 L. Harred, NE cor. NW NW, Section 24-15-17, is dry and abandoned at 1,354 feet. J. L. Haner's No. 6 M. Stedham, NW cor. NE NE SE, Section 8-15-18, has been abandoned at 994 feet. J. M. Foltz' No. 1, NE cor. SW NE SW, Section 9-15-18, has been completed for 150 bbls. in sand 978-93 feet. No. 2 Spaulding, SE cor. NW NE SW, Section 9-15-18, made a 20-bbl. well in sand 873-83 feet.

**Okfuskee County**

Atlantic Oil Production Co.'s No. 9 Simmer, CEL SE SE, Section 11-10-11, is drilling at 1,510 feet. Champlin Oil & Refining Co.'s No. 1 McGilbray, SW cor. NW NE, Section 18-12-11, has been completed for 150 bbls. in sands 2,685-2,715 feet and 2,845-46 feet. Minnehoma Oil Co.'s No. 5 Fields, SE cor. NE NE, Section 24-11-11, is dry and abandoned at 4,180 feet. Transcontinental Oil Co.'s No. 1 Lasley, SW cor. NW, Section 25-10-10, has been deepened to 3,253 feet and completed for 56,000,000 feet of gas. Wells & Downs' No. 2 Stilwell, NE cor.,

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Section 14-10-11, has been completed for 45 bbls. in sand 2,106-21 feet.

**Okmulgee County**

Kirkland & Son's No. 3 E. Brown, NE cor. SW SW, Section 9-15-13, is drilling at 2,100 feet. A. W. Cline has a machine on the ground for No. 8 Harison, CEL NE SW, Section 19-15-14. J. L. Selby's No. 34 A. Anderson, NW cor. NE NW, Section 35-14-14, has been completed for 25 bbls. in sand 1,113-30 feet. L. Neal's No. 2 M. Simmer, C SE SE, Section 4-12-13, is dry and abandoned at 3,050 feet.

**Pittsburg County**

Midwestern Oil & Gas Co. has a machine on the ground for No. 1 Bascom, SE cor., Section 10-7-18.

**Payne County**

Reiter-Foster Oil Corp. made location for No. 2 Kinnerman, NE cor. SW, Section 4-19-1w. Magnolia Petroleum Co.'s No. 4 Page, SW cor. SE NE, Section 7-19-6, is an old well drilling deeper at 3,405 feet.

**Pottawatomie County**

J. A. Hull made location for No. 1 Townsend, NE cor. SE SE, Section 22-6-3. Magnolia Petroleum Co.'s No. 2 Singletary, SW cor. SE SW, Section 15-7-4, is making 14 bbls. from sand 3,608-3,722 feet after plugging back from 4,042 feet. No. 6 Billington, SW cor. NW NE, Section 22-7-4, St. Louis Field, drilled to 4,270 feet and plugged back to 4,160 feet and completed for 1,000,000 feet of gas. No. 7 Billington, SE cor. NE NW, Section 22-7-4, has been completed for 1,500,000 feet of gas in sand 4,217-55 feet.

**Seminole County**

Amerada Petroleum Corp. and Wilcox Oil & Gas Co. made location for No. 2 Gates, NW cor. NE NE, Section 25-9-5. Carter Oil Co. has the cellar dug for No. 5 Coker, SW cor. NE SW, Section 2-8-5, Mission Pool. Pure Oil Co. is building the rig for No. 1 Asby, SE cor. NE, Section 22-7-5. Continental Oil Co. made location for No. 9 Harris, NW cor. SW, Section 4-7-7. The Texas Company has the cellar dug for No. 4 Chilcoat, SW cor. NW, Section 4-7-7. Independent Oil & Gas Co. moved the rig in for No. 5 Okfuskee, NE cor. SW NW, Section 16-6-6, Konawa Pool. The rig is on the ground for No. 6 Okfuskee, NW cor. SE NW, Section 16-6-6. Hilton Phillips' No. 2 Chupco, SW cor. NW SE, Section 20-6-6, is a cellar. The cellar has been dug for No. 4 Hyde, NE cor. SW NE, Section 20-6-6. Mid-Continent Petroleum Corp. has the rig on the ground for No. 3 P. Harjo, SE cor. SW SE, Section 20-6-6. No. 5 P. Harjo, NE cor. SE SW, Section 20-6-6, is also a rig on the ground. Empire Oil & Refining Co. made location for No. 1 Caesar, SW cor. NE SW, Section 21-6-6. Sinclair Oil & Gas Co. made location for No. 1 Caesar, NW cor. SE SW, Section 21-6-6. Location has also been made for No. 2 Caesar, SW cor. SE SW, Section 21-6-6. Harris and others made location for No. 3 Burgess, SE cor. NW SW, Section 21-6-6. Burke-Greis Oil Co. made location for No. 3 Caesar, SE cor. SW SW, Section 21-6-6. Mid-Continent Petroleum Corp.'s No. 4 P. Harjo, SW cor. SE, Section 20-6-6, is a rig on the ground. Amerada Petroleum Corp. and others' No. 3 Edwards, NW cor. NE NE, Section 2-9-5, has been completed for 1,765 bbls. in Viola lime 4,110-4,231 feet. Gypsy Oil Co.'s No. 2 Hulbutta, SE cor. SW SW, Section 14-9-5, is pumping 163 bbls. from Wilcox sand 4,240-45 feet. Burke-Greis Oil Co.'s No. 1 Powell, SW cor. NE SE, Section 7-9-6, East Earlsboro Pool, made 240 bbls. at 4,305 feet in Wilcox sand topped at 4,290 feet. Gypsy Oil Co.'s No. 5 Taylor, SE cor. SW, Section 19-9-6, is dry and abandoned at 4,293 feet. Amerada Petroleum Corp. and Dixie Oil Co.'s No. 3 Scott, NW cor., Section 30-9-6, has been completed for 125 bbls. in Wilcox sand 4,190-99 feet. Flake & Wilson's No. 1 Douglas, NE cor. SW NE, Section 30-8-8, has been completed for 241 bbls. in Cromwell sand 3,264-68 feet. Magnolia Petroleum Co.'s No. 3 Coker, NW cor. SW SE, Section 13-7-6, has been completed for 256 bbls. in Wilcox sand 4,155-67 feet. W. B. Pine's No. 3 Bean, NE cor. SW, Section 13-7-6, Little River Pool, has been completed for 360 bbls. in Wilcox sand 4,226-31 feet. Mid-Continent Petroleum Corp.'s No. 16 Smith, NW cor. SE, Section 5-7-7, East Little River Pool, made 310 bbls. in sand 3,180-99 feet. No. 17 Smith, SE cor. SW NE, Section 5-7-7, has been completed for 475 bbls. in sand 3,205-25 feet. Sinclair Oil & Gas Co.'s No. 11 Phillips, NW cor. NE SE, Section 5-7-7, has been completed for 590 bbls. in sand 3,225-51 feet. Empire Oil & Refining Co. and others' No. 1 Rogers, SW cor. NW, Section 9-6-6, Konawa Pool, is dry and abandoned at 2,939 feet. W. B. Pine's No. 1 Charty, NE cor. NW SW, Section 16-6-6, flowed 6,222 bbls. from Cromwell sand 2,861-74 feet. Dixie Oil Co.'s No. 2 Griffin, SW cor. NE NW, Section 17-6-6, has been completed for 10 bbls. at 2,883 feet after plugging back from 2,932 feet. Shell Petroleum Corp.'s No. 1 Caesar, NW cor. SE SE, Section 20-6-6, made 5,027 bbls. from Cromwell sand 2,910-38 feet. Twin State Oil Co.'s No. 1 Charlie "A," SE cor. NE NE, Section 20-6-6, has been abandoned at 3,065 feet. No. 2 Charlie "A," SW cor. NE NE, Section 20-6-6, produced 5,570 bbls. from Cromwell sand 2,955-62 feet. Gypsy Oil Co.'s No. 1 Hepsey, SW cor. SE NW, Section 21-6-6, has been abandoned at 3,688 feet. The Texas Company's No. 3 Lewis, NW cor. SE NW, Section 13-5-7, has been completed for 540 bbls. in Wilcox sand 4,280-91 feet. No. 1 Reed, SE cor. NW NE, Section 23-5-7, made 585 bbls. in second Wilcox sand 4,234-39 feet. Sunray Oil Corp.'s No. 2 Jones, SW cor. NW SW, Section 24-5-7, is dry and abandoned at 4,095 feet. The Prairie Oil & Gas Co. is digging the cellar for No. 2 Wyetka, NW cor. SW SW, Section 24-5-7. No. 1 Burgess, NE cor. SW SE, Section 7-6-6, Konawa Pool, has been abandoned at 4,075 feet. No. 1 Lemons, NE cor. SE, Section 7-6-6, is dry and abandoned at 3,340 feet.

**Wagoner County**

E. A. Ross has a machine on the ground for No. 1 Sequoyah, SW cor., Section 5-18-19. H. E. Tyson's No. 3 Littlehead, SW cor. NW, Section 13-16-15, is a machine.

**Tulsa County**

A. G. Cory's No. 1 Rentie, NE cor. NW, Section 31-19-10, has been abandoned at 2,915 feet.

## MICHIGAN FIELDS

(Continued from Page 67)

DuVall, is being plugged as a "duster" in the Dundee.

The East Shore Oil Co.'s No. 1 Richard Nyland, NW NE, Section 26-2n-11w, Martin Township, Allegan County, was dry in the Monroe formation at 1,999 feet and has been plugged.

**Southwestern Wildcats**

Blair & Miller's No. 1 Shippy, SE NE, Section 32-7s-13w, Porter Township, Cass County, was dry at 700 feet, a depth at which the nearby No. 2 Stutsman came in as a 15-bbl. initial pumper. Drilling will be continued to the Trenton formation, which lies at about 2,000 feet. A new well is being started for the Gibson-Johnson-Borden Syndicate in Berrien County. Two wells of the Wolverine Oil Development Co. in Van Buren County, near Decatur, have been abandoned. The Niles Petroleum Syndicate, headed by Fred B. Cook, is expected to start operations on a 2,000-foot well in the near future.

**New Central Michigan Wildcat**

A new central Michigan wildcat has been started by the Hillmur Oil Co. of Lansing on the George Cicarlton farm in Conway Township, Livingston County. This is the fourth well to be drilled in Conway Township. A rig for the new


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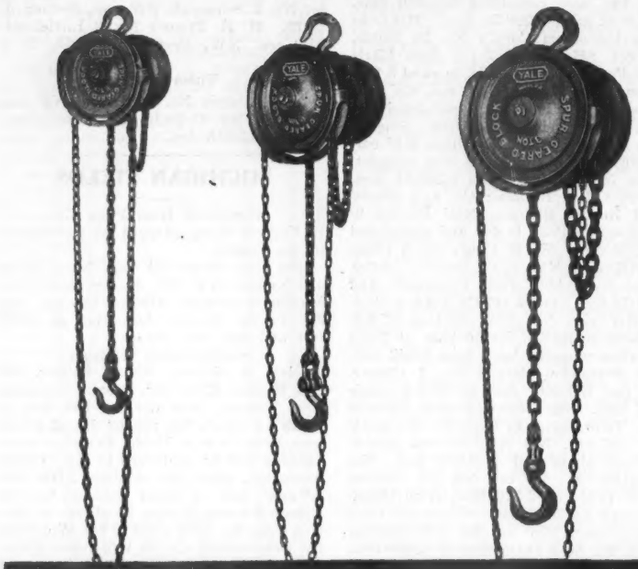

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YALE MARKED IS YALE MADE

test has been moved over from the Amos Turner's No. 1 Doolittel, NW NE NE, Section 14-4n-2e, Locke Township, Ingham County, abandoned at about 650 feet deep a few days ago. The new well will be the Hillmur Oil Co.'s No. 1 Cicarlton, SE SE SW, Section 28-4n-3e, Conway Township, Livingston County.

A permit has been granted for K. Barr Oil & Gas Co.'s No. 1 Kolodziej, NW NE, Section 28-11n-15e, Washington Township, Sanilac County. This is in wildcat territory.

Another Clare County wildcat well was dry in the Dundee this week. It is J. A. McKay and John A. Mercier's No. 3 well on the Citizens State Bank lease, SE SE, Section 31-18n-4w, Hatton Township. It has been drilled to about 3,950 feet and may be plugged back and shot in the Traverse where a fair show of oil was encountered.

**Production**

Average daily production of the Muskegon and Mount Pleasant oil fields is holding steady again at about 4,000 and 7,000 bbls., respectively. The old Saginaw Field of east Michigan accounts for an additional 200 bbls. a week for a daily average of about 11,200 bbls. for the State.

**Gas at Manistee**

A considerable flow of gas was reported to have been struck in Smith & McCauley's wildcat on the Piellusch lease, NE SE, Section 20-21n-16w, Stronach Township, a short distance east of Manistee. Gas was struck at 1,085 feet and the flames leaped high in the air, illuminating the country when the flow was lighted. The well has been shut in and drilling operations have been suspended.

Although it is not certain what formation the gas has been encountered in, it is believed to be the upper Traverse or possibly higher formations, either the Berea or Coldwater shale. Rock pressure has been estimated at several hundred pounds.

This strike of gas is at a new depth for wells in the vicinity of Manistee, although a number of other operators have encountered it in paying quantities at the shallow depth of from 600 to 700 feet. Only one well, Diamond-Thompson-Holland's No. 1 Diamond, in Section 15, Grant Township, Mason County, about 8 miles south of Manistee, is being produced as a dry gas well.

Tackett & Drake's No. 1 Manistee Sand & Dock Co., NE NW, Section 13-21n-17w, Filer Township, Manistee County, was dry in the Monroe formation at about 2,000 feet.

A. S. Cochran, a Muskegon contractor, is rigging up to carry the Swastika Oil & Gas Co.'s No. 1 Sands Lumber Co. well, in Section 6, Filer Township, Manistee County, from its present depth of about 600 feet.

## KANSAS FIELDS

(Continued from Page 60)

ground for No. 20 Kukuk, SW cor. SE NE, Section 24-32-4. Ben Grallup's No. 1 Brant, C NE NW, Section 8-32-5, is a machine. Crow and others' No. 1 Lowe, SE cor. NE NE, Section 8-32-5, has been completed for 250,000 feet of gas in sand 718-48 feet. Binkley & Crow's No. 1 Powers, C SE NW, Section 9-32-5, has been completed for 225,000 feet of gas in sand 720-60 feet. The Prairie Oil & Gas Co.'s No. 1 Reidy, SE, Lot 27, Section 18-32-8, has been abandoned at 2,908 feet.

**Morton County**

Argus Gas Co. made location for No. 1 Watson, C NE, Section 27-34-40w. Location has been made for No. 1 M. Angle, C SW, Section 6-34-39w. No. 1 Thompson, C SW, Section 7-34-39w, is a location. Location was also made for No. 1 Thompson, C NW, Section 18-34-39w. No. 1 Dorth, C NE, Section 20-34-39w, is also a location.

**Greenwood County**

Derby Oil Co. and Braden & McClure made location for No. 6 Young, CNL NE SE, Section 22-22-13. Amerada Petroleum Corp.'s No. 7 Luthi, SE cor. NE SW, Section 29-22-13, is rigging up. The Texas Company made location for No. 2 Blanck, SE cor. NW SE, Section 29-22-13. Independent Oil & Gas Co.'s No. 1 Thrall, NW cor. SW SW, Section 27-23-10, is rigging up. Simmons and Amerada Petroleum Corp.'s No. 2 Winegar, NW cor. SE, Section 27-23-11, is rigging up. Syndicate Oil Co.'s No. 5 Shook, CWL SW NW, Section 6-24-12, is drilling at 800 feet. C. W. Titus has a machine on the location for No. 1 Scott, CNL S half N half NW, Section 17-24-12. Derby Oil Co.'s No. 3 Beaver, C SW SE, Section 25-24-12, has a show of oil in sand 1,663-69 feet, drilling at 1,668 feet. Mendenhall and others' No. 2 Hollister, SW cor. NE SE, Section 5-25-13, is drilling at 775 feet. Braden and others' No. 2 Wigler, NE cor. NW SE, Section 22-22-13, is dry and abandoned at 1,865 feet. Phillips Petroleum Co.'s No. 2 Patterson, NW cor. SE SW, Section 22-23-11, has been completed for 50 bbls. in sand 1,940-93 feet. Empire Oil & Refining Co.'s No. 2 Nesbitt, CSL NW NW, Section 6-24-12, has been abandoned at 1,930 feet. Syndicate Oil Co.'s No. 4 Shook, CNL SW NW, Section 6-24-12, has been completed for 25 bbls. in sand 1,750-87 feet.

**Marion County**

Empire Oil & Refining Co. moved the rig in for No. 1 Heilurt, SE cor. SW SE, Section 20-20-2.

**McPherson County**

Shell Petroleum Corp.'s No. 4 Ritz, SE cor. SW SW, Section 1-20-2w, Ritz Pool, is drilling out plug to deepen from 3,015 feet. W. C. McBride, Inc.'s No. 4 Voshell, NE cor., Section 9-21-3w, Voshell Pool, has been completed for 835 bbls. in Silicious lime 3,370-79 feet. No. 5 Voshell, SW cor. NE NE, Section 9-21-3w, made 1,295 bbls. in Silicious lime 3,335-44 feet.

**Reno County**

United Petroleum Co. and others' No. 1 Houston, NW cor., Section 4-22-10w, is moving in tools.

**Rice County**

McPherson Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 Jennings, NE cor. SW NW, Section 29-18-6w, is a rig going up. E. H. Langston and others made location for No. 1 Mowery, C NE, Section 34-19-9w. Braden & McClure made location for No. 1 Groves, NW cor. NE SW, Section 27-20-10w.

**Russell County**

Mid-West Exploration Co. has the rig up for No. 33 Witt, SE cor. SW SE, Section 4-14-15w.

**Sedgwick County**

Hays and others' No. 1 Hladick, SW cor. SE SW, Section 15-26-2, is drilling deeper at 2,966 feet.

**Sumner County**

Shawver and Continental Oil Co. made location for No. 2 Norrish, C NE SE, Section 27-34-2. Slick, Pryor & Lockhart's No. 1 Peasel, NW cor., Section 33-31-1w, has been deepened to 4,193 feet, plugged back to 3,715 feet and completed for 90 bbls. Lee Payne and others' No. 1 Frederick, NE cor. SW SE, Section 12-31-2, is dry and abandoned at 3,598 feet. E. B. Shawver and others' No. 2 Curry, C NW SW, Section 26-34-2, has been completed for 2,250,000 feet of gas in sand 1,557-66 feet.

**Woodson County**

Derby Oil Co. and Spencer's No. 2 Guy, NE cor. NW SW, Section 29-23-15, is a machine.

## LA.-ARK. FIELDS

(Continued from Page 68)

2,500 feet. Palmer Corp.'s No. 1-A Marston, Section 11-19-10, West Carroll Parish, was dry and abandoned at 2,820 feet. The company has drilled nine wells in developing a potential gas field straddling the East Carroll and West Carroll Parish line in addition to five drilled by other operators, and of these 14 wells, two in East Carroll made 82,029,000 feet initial and a third in West Carroll gauged 18,382,000 feet. A. C. Glassell got a show of gas at 895 feet in No. 1 Pittsfield, Section 41-8-10, Concordia Parish, but on drill stem test it was dry and has resumed drilling. Davis and others of Port Arthur are collecting a block of 6,000 acres in Tensas Parish, north of Glassell's 100,000-acre block in

Concordia. It centers around Section 27-10-10, west of Waterproof, and the leases call for a 3,500-foot well to be started by December 1 this year. Someone, said to be Gulf Refining Co., has a torsion balance crew at work on the north shore of Catahoula Lake in LaSalle and Catahoula Parishes. Palmer Corp. has a lease from the State on the bed of the lake and Standard Oil Co. also is reported interested in that area.

Four of five completions in the Zwolle district added 175 bbls. new production, 85 bbls. in Zwolle proper and 90 bbls. in Blue Lake. The latter well, R. L. Gay, trustee's No. 7 Bowman-Hicks, Section 14-7-14, completed at 2,575 feet effected a western extension of proven area for about half a mile. Loring Oil Co.'s No. 7 Bowman-Hicks in Section 4-7-12, is a slight southern extension of Zwolle territory making 10 bbls. from 2,700 feet. All the other Zwolle completions were townsite wells in Sections 31 and 32-8-12: F. M. Hood's No. 1 Winston, 40 bbls. at 2,515 feet; Jones & Johnson's No. 1 Pearson, 35 bbls. at 2,318 feet; and O'Brien Brothers' No. 1 Colquit in Section 32, dry at 2,575 feet. W. G. Gray's No. 1 Knowlton in Section 6-7-12 on the south edge of Zwolle townsite was disappointing. It was reported showing oil in the Woodbine underlying the chalk from which present Zwolle production is coming. It bailed dry at 3,657 feet and will go deeper. This is the first well to explore the underlying formations since the present Zwolle excitement got under way. Loring Oil Co.'s No. 5 Bowman-Hicks, in Section 34-8-12, another deep test cored sandy shale showing oil at 3,200-05 feet but not enough to warrant a test and is reaming to the bottom, total depth 3,468 feet. Pelican Natural Gas Co. failed to make a well of No. 1 Sabine Lumber Co. in Section 1-7-12 which showed for a producer last week at 2,533 feet and plugged back to 6⅝-inch casing seat at 2,288 feet. Location is 1½ miles southeast of production. Its No. 1 Louisiana Long Leaf Lumber Co. in Section 4-7-11, a possible 4-mile extension, or the discovery well of a new pool, which ever one choses to call it, is still off production, cleaning out after pumping at the rate of 30 bbls. per day from 2,425 feet for a few hours last week.

F. A. Fuller is gathering a block of leases centering on Section 10-18-8, Webster Parish, of which he has 3,300 acres and on which he is obligated to start a 3,000-foot well by August 1. Location is about 3 miles north of J. J. Keane's No. 1 Monzingo in Section 27-18-8, and 7 miles east of Sibley. About the same distance southwest of the Monzingo, J. P. Evans is busy blocking, supposedly for one of the major companies here.

**One Completion in Arkansas**

Weisinger & Ball's No. 1 Rogers, Section 31-17-15, El Dorado district, pumping 12 bbls. oil and 88 bbls. of water from 2,221 feet, was Arkansas' one completion. Lion Oil Refining Co. is preparing to abandon No. 1 Ballard in Section 10-18-13, Urbana district, having cored a salt water sand at 4,487 feet and drilled to 4,501 feet. J. W. Olvey cored a water sand at 3,547 feet on No. 1 G. G. Simmons in Section 15-18-13. Slightly more encouraging is Simms Oil Co.'s No. 1 G. G. Simmons in Section 10-18-13, which is standing within 300 feet of the top in fluid from 6 feet of sand, total depth 3,530 feet. Cosden Oil Co. of Arkansas tested salt water at 3,050 feet whence it rose 1,200 feet, in No. 1 Doniphan Lumber Co. in Section 19-9-10, Cleburn County, and is shut down for orders. This is Cleburn County's first test. The company's No. 1 Missouri Pacific Railway, in Section 13-9-19, Pope County, is drilling lime at 4,037 feet.

**In Mississippi**

Love Oil & Gas Co.'s No. 1 Mendoza in Section 11-5-1e, Hinds County, Mississippi, was written off as a completion, gauging 28,569,920 feet of gas at 1,000 pounds, total depth 2,447 feet. Of the five successful tests among several score wells drilled in Mississippi during the last few years, it is by far the best. Two of these five gas wells were in Monroe County, the discovery well at Amory making an estimated 16,000,000 feet though reported as 5,000,000 feet and a second well in the same area being much smaller. Jackson Oil & Gas Co.'s No. 1 Mays, Section 2-5-1e, Hinds County, made 2,000,000 feet of gas, and Gulf Refining Co. got an estimated 10,000,000 feet of gas with about 20,000 bbls. of salt water in No. 1 Rainey, Section 13-5-1e, Rankin County. Dome Oil Co. claims to have found sand showing oil at 818-24 feet in No. 1 Elton, Section 5-4-1e, Hinds County, and Jackson Oil & Gas Co. also claimed sand showing oil at 2,910 feet in No. 1 Taylor, Section 36-6-1e, but lost the core and is arranging to set 6⅝-inch at 2,808 feet. Love Oil & Gas Co. has made location for No. 2 Mendoza. Magnolia State Oil Co. abandoned location for No. 1 Brown, Section 19-6-1e, Hinds County, and Amory Petroleum Co. abandoned No. 1 Hall, Section 8-13-19, under way for the last two or three years or more, as a junked hole at 2,395 feet. It was claimed that this well made a small show of oil after a shot at 2,402-18 feet. Fred L. West and others have a block of 40,000 acres in Grenada and Carroll Counties centering around the town of Dubbard of which they have transferred 10,000 acres to Carter Oil Co. for a well.

## CALIFORNIA FIELDS

(Continued from Page 67)

which prevents consistent production. It sometimes requires a month or more before these wells overcome this sand condition and go on steady production. George F. Getty finished a nice well in the Fruitvale Field of Kern County during the week when No. 1 Farrell was brought in under a natural flow doing 1,105 bbls. of 23.6 gravity oil daily from 3,975 feet. This project was shut in a short time after completion due to the lack of storage facilities and the inability to negotiate a satisfactory contract for disposition of the oil. The General Petroleum concluded drilling operations on No. 17 Glide, a new well in the Mount Poso Field at 1,760 feet and, while no production test was made, it is mechanically complete with an 8⅝-inch oil string landed on bottom and ready for production whenever desired.

## Two New Buildings Required to House Exposition Exhibits

The $100,000 expansion program now nearing completion at the grounds of the International Petroleum Exposition and Congress in Tulsa was amended by action of the executive committee to cover further building activities in an extent which doubles the size of the expansion projected for this year, W. G. Skelly, president, announced.

In addition to the marketers and refiners building, a 60x240-foot steel structure, which will be finished early in June, the amended program calls for another building of identical size and specifications.

Decision to double the extent of the Exposition plant enlargement program came when the report of William B. Way, general manager, revealed that all available booth spaces at the plant have been sold and that already there are 72 applications for booths in the 1930 oil show, October 4-11, which can not be filled unless more facilities are provided.

## SON TAKES FATHER'S PLACE

C. F. Williams, of Tonkawa, Okla., who with G. W. Mennis and James Kelley of Fort Worth, Tex., lost his life in a recent airplane accident, had been engaged in the manufacture of oil field specialties for 23 years in the Mid-Continent. He assisted in the organization of the W-K-M Co. of Houston, Tex., and later the Williams Iron Works Co., Inc., Tonkawa; Texas Worth Tool Co., of Fort Worth, and the Williams Welding Works, Inc., Oklahoma City, Okla. His son, Clinton F. Williams, Jr., has assumed direction of the father's interest in the various companies.


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# Moderate Movement in Chicago Area

## Consumption Checked by Unfavorable Weather Over Week End. Prices Continue to Show Ease. No Large Ordering Monday

By J. B. Waldo

CHICAGO, May 19.—This market was quiet today with only a moderate movement of any product at best. The spot demand for gasoline was not active and there is some slowing down on contract movement largely because of the check to consumption due to unfavorable weather. The week-end business was much reduced by cold weather and some rains and near-by jobbers report that their sales were only a little larger than one-half the business of the previous week-end. There is some comment regarding the number of cars on the roads, some claiming there has been less highway motoring during May than April or even March.

In the absence of a sustaining demand prices for U. S. Motor gasoline continued to show ease and quotations of 6¾ cents were made. The major refiners are holding for 7½ cents although one Oklahoma refinery usually classed as among the majors is quoting 7¼ cents. There was no large ordering on Monday, the business being made up of single cars for the most part and a five-car order is considered large right now.

Kerosene is dragging along with a few sales made on Monday, one refiner securing a major share of the business on a quotation of 4 cents for 41-43 kerosene. Domestic fuel oil was not moving Monday in any but a very small way, the cold weather bringing a little business to distributors. There were quite a number of inquiries in the market Monday for industrial fuel oils but none of them for large quantity. Prices were practically unchanged with 18-22 quoted today at between 55 and 60 cents although some oil of this gravity but with a very high viscosity is being quoted at 52½ cents. The lubricating oil demand is light. Pennsylvania bright stocks were quoted here today at within 1 cent of the price at which western bright stocks are being held.

### Jobbers Storage Grows

There is one thing that will prove quite an important factor in this season's gasoline situation. That is the increased volume of jobbers' storage. According to personal observations and the reports of many salesmen who travel this territory, it would seem every jobber of any consequence has done something to increase the quantity of gasoline he can take in and carry for future sales. The volume would naturally relate more or less closely to the size of the jobber's original business. A small jobber, a small tank, a larger jobber, larger tanks and more of them. Very little has been said regarding this phase of the situation. One oil man stated he had never heard a mention of tankage at any meeting of the oil men, yet he regarded it as one of the most important parts of an oil man's business. Storage with the jobber works just as it does with the refiner only it is reversed. The refiner with ample storage can await his chance to sell to good advantage while the jobbers' storage gives him the opportunity to wait for a good chance to buy. With modern tight tanks most of the wastage due to evaporation is overcome, at least it is reduced to a minimum and can easily be afforded. No estimate even of the volume of the jobbers' storage is available nor how much it had been increased during recent years. One salesman who travels the territory very thoroughly and has an unusual acquaintance with jobbers' problems said he would not be surprised to learn jobbers' storage had been doubled within the past four years. Others thought this was too large an estimate but all agreed it was considerably larger than three or four years ago.

The volume of storage available to the jobbers is of prime importance and it explains several things that seemingly have in a degree puzled the trade. The heavy refinery shipments during March and April when the consumption was actually rather light was to fill these tanks. The check to buying during the past two weeks when the jobbers were having for the most part a very fair outlet for their gasoline is explainable only on the theory they were drawing on their storage. Of course consumption has not been all hoped for during the past two weeks but it has been some better than a year ago. In the farming districts jobbers have explained the farmers are too busy getting their crops started to do much motoring. The statement has been recently made that one-fourth of the motor cars were owned on the farms. If one-fourth of the automobiles are not being used as much as usual the result in the consumption of gasoline would be noticeable. Happily this condition will soon change and the farmers' auto will be as great a consumer of gasoline as it is at any time.

This check to buying in this territory has not been without its serious consequences. At least it has seriously disturbed some refiners who depend for their outlet on sales made in the spot market and have no controlled outlets of their own. As day after day passed with few if any orders coming to the refinery these refiners were obliged to seek some relief and one of their methods was to reduce prices and to compete with the quotations sent out by the market letters from a number of Group 3 brokers. These quotations at the first part of last week were generally 6¾ to 6⅞ cents.

It is currently stated here the material being shipped by at least some of these sellers comes from the McCamey plant of the Humble Oil & Refining Co. This plant had large fuel oil contracts and apparently to fill these contracts had to overrun its gasoline sales and accumulated a very considerable stock of gasoline. The combined result has been that lower prices have been named and the business for May is considerably disorganized as the present quotations for delivery over 10 days which will practically take care of the month are lower than the prices at which gasoline was contracted for sale over the last half of the month.

### Price Situation

Major refiners are still holding for their price of 7½ cents to spot buyers while their contract price for the week was according to the different companies anywhere from .0728 to .0732 cents. The local marketers have tried to do business at 7 cents with spot buyers but too much gasoline has been offered direct at prices in some instances ranging as low as 6½ cents for material purporting to be Oklahoma U. S. Motor gasoline and some of it offered by such reliable sources that it must at least have been good material. But no price would attract any volume of business and the volume of spot sales last week was one of the lightest for years. The condition is a logical one from the standpoint of the jobber. He bought early in quantities at low prices and has made only a small reduction in his stocks. By holding back his orders now he puts the refiner in the position of carrying the load and is not forcing up prices against the time when the jobber will have to replenish his stocks. The situation as it developed during the past two weeks has been a surprise to the jobber and the marketer alike as they bought and sold considerable quantities of gasoline for delivery over the last half of May at prices ranging from 7½ to 7¾ cents. What will be done regarding these sales has yet to be determined. There has been almost nothing doing in the higher tests. Prices of the 60-62 400 endpoint are easy which may be accounted for by the fact that much of the Ethyl Gasoline has that gravity as the basis gasoline of the blend. The 64-66 375 endpoint has held better on account of export buying absorbing much material and the offerings being light.

### Kerosene Dragging

Kerosene is just dragging along, the sales consisting of occasional cars. Many refiners are holding for 4¼ cents for the 41-43 water white kerosene and a few for 4½ cents but jobbers can buy at 4⅛ cents. Some little improvement in the demand is expected at the time of the small grain harvest in late July but the increase will not have much effect if any on the price situation.

### Distillates and Gas Oils

There is no activity in present business in distillates or zero gas oils. Requests for contracts for the coming season are quite common and some tentative contracts are being made. These contracts are very largely renewals of last season's contracts as to grades and quantity of material, the price to be that ruling on date of shipment to be determined in some way usually by averaging published quotations. There are some variations in the form of the contracts and in the minor details but this is the sense of the contracts at present available. Some leading dealers in these materials will not try to make even such a non-committal contract and are asking their trade to wait until they can offer something more definite. One reason for this is the fact that while there is little idea of any difficulty in securing plenty of distillate and zero gas oil the outlook for a supply of the 28-30 zero and grades with practically that gravity are in uncertain supply. They were scarce and hard to buy last winter which was a rather mild one. Distillate is moving occasionally for some special purpose and 3 cents is the top price today for good material. Zero gas oil is in about the same position. Some of the tank wagon distributors supplying it to plants which use a gas oil the year round but the total volume of this business is inconsequential and the prices are unchanged but the tone is easy.

Straightrun gas oil is in a little better demand than the zero grade or distillate but the movement is not large. The gas companies are very slow to close any important deal and the margins are very narrow. Some large sources of supply are holding for 2½ cents but gas companies are buying at 2⅜ cents and with good gas oil not readily purchasable for resale at less than 2¼ cents the profit in the deal is very small unless it be for an unusual quantity and there is none of these large deals going through at present so far as is known. So far as the gas companies are concerned the situation is not unusual. Usually at this time the companies are making their contracts for the coming season and they use all possible tactics to depress prices and secure the best possible contract. There is doubtless some demand for cracking in the field but there have been no inquiries here to indicate this demand is very active but it may develop with the larger consumption of gasoline a little later.

### Fuel Oils

Industrial fuel oils are still moving slowly. Salesmen state they have never met with so much sales resistance to their efforts to get business from large and small buyers alike. The situation in fuel oil here is a temporary one. Two local refineries which are at present offering considerable fuel oil of good quality expect to start their cracking units about June 20, and while they will have some fuel oil after the cracking units are running it will be less in volume and of a heavier gravity than they are offering the trade at present. Some of the largest dealers in industrial fuel oils are taking active steps to increase their sources of supply looking chiefly to the Southwest for a possible Smackover Field. In the meantime the local refineries are very careful not to close the door entirely to the possible sale of fuel oil nor to commit themselves to being relied upon for any definite quantity. They may have some fuel oil, just how much or of what gravity of viscosity will depend on circumstances. There is probably more fuel oil being offered today than there will be a month from now, certainly in two months. Some refiners have large contracts for next winter but it is too soon for them to begin to hold their fuel oil against these contracts, the refiners have not the capacity to store their refinery surplus that long. So they would like to move some oil now and begin to hold for their contracts later. Prices are just about where they were a week ago. The heavy 18-22 is being offered here at a range of prices from 55 to 60 cents a barrel and the 22-26 at 70 cents a barrel. The 28-30 zero fuel oil is generally held at 90 cents. There has been some buying of this grade for storage as users seem to expect a small supply but most of these light fuel oils are blended oils and can be produced even if the refinery runs are small of this particular gravity.

### Lubs

The cut in Pennsylvania crude was not a surprise as refiners who had been in the market from that field stated they were oversupplied for their present movement. It was also known that the producers were moving towards a reduced output. According to refiners from Pennsylvania they are greatly overstocked with bright stocks and need relief. Prices for both eastern and western material are being held but if the demand does not show an early improvement the trade here expects to see some break in prices somewhere. Motor oils are very quiet right now. Much success is claimed for the various newer products for which superior quality is claimed, the only trouble being that there are too many brands from which the motorist can make his choice.

### Tank Wagon Prices

The trade seem to have abandoned for the present the idea of a further increase in tank wagon prices in this territory, because they have given up the idea of a further crude advance. But the two do not necessarily go together. However, the gasoline market during the past two weeks has exhibited such an uncertain movement that any proposed tank wagon advance would have to be made if made now, in the face of a demoralized rather than a settled market. But this market may change almost overnight. The Memorial Day holiday is approaching. This year it comes on Friday and already a number of prominent business organizations have indicated their intention of closing from Thursday night to Monday morning and with even indifferent weather this means a very large consumption of gasoline. This is bound to help the situation in the market even if nothing else happens for every jobber will plan to have an adequate supply on hand for the holidays and some cars rolling to take the place of the gasoline sold.

The time is nearly here when a good

(Continued on Page 168)

# Eastern Gasoline Continues Strong

## Steadily Broadening Volume Again Features Refined Markets. Favorable Weather Stimulates Consumption. Less Price Cutting

By A. E. Mockler

*New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street*

NEW YORK, May 19.—Continued strength in gasoline, with steadily broadening volume, has again featured the East Coast refined products markets this week. Cylinder stocks and paraffin wax have eased off somewhat in price, but aside from this, the market has been an uneventful one.

Favorable weather conditions have materially stimulated consumption of gasoline in the East Coast area, and sales are currently running at the heaviest volume attained thus far in 1930. The statistical position of the market has firmed up to the point where a general increase in tank wagon and service station price levels is looked for throughout the area. Marketing conditions have shown notable improvement, and there is less price cutting than for several months back.

Eastern refiners are still making every effort to hold down their gasoline production and stocks, and it is expected the statistical position of the market will show steady improvement during the summer, when peak consumption of motor fuel normally develops. Some of the larger factors here are carrying smaller gasoline stocks than they had a year ago at this time, but this condition is not general.

A marked trend toward premium gasolines continues. The Texas Company this week formally announced that it had started marketing Ethyl Gasoline. Warner-Quinlan Co., leading local independent, has placed a new premium gasoline "Warnoco" high test motor fuel, on the market at a premium of 3 cents over U. S. Motor.

### Tank Car Gasoline

Sales are hitting their seasonal stride, and the market is in firm position at all principal East Coast ports. The posted price basis of 9 cents at local and nearby refineries was definitely established this week when Sun Oil advanced its tank car price for U. S. Motor to 9 cents at its Philadelphia refinery. Hitherto, Philadelphia has been slightly under the Bayonne basis.

While one or two refiners are quoting 10 cents at refinery terminals, and others are asking 9¼ to 9½ cents, the established basis is 9 cents, at which figure most of the principal producers are holding. Richfield, which is marketing California U. S. Motor of slightly better than standard specifications, is among the 10-cent quoters, holding the California product at a 1-cent premium because of the antiknock qualities which it possesses.

Jobbers have been ordering forward tank car shipments regularly, and there is a general disposition among these distributors to keep their storage full, in the belief that a further upward price move may be looked for at any time. Many jobbers who formerly operated to a large extent on U. S. Motor have been running more largely to premium grades this year, and a steadily increasing proportion of refinery tank car shipments now falls in the premium fuel classification.

As a result of the exceptionally favorable weather thus far in May, refiners in the East Coast area have been drawing heavily against storage stocks of gasoline, and this has resulted in substantial improvement in the statistical position of the market. A number of the principal refineries in this area continue to operate on a curtailed basis, with every effort being made to hold stocks down to comparable 1929 levels, or below.

Sales have shown a pronounced increase and the market is in firm position. Volume for the first half of May was substantially in excess of that for the comparable period last month and for the first 15 days in May, 1929.

Premium fuel sales are steadily gaining, and it is expected that in many instances volume on the higher-priced gasolines will more than equal that on ordinary U. S. Motor for the full year 1930. Thus far, the premium fuels have almost entirely escaped the effects of price-cutting campaigns in the East.

Reports that Continental will enter the eastern marketing field on a broad scale have aroused considerable interest among marketers here, but it is expected this "invasion" will be through the medium of acquisition of, or merger with, a marketing agency already established here.

### Tank Car Kerosene

Principal sellers continue to quote water white at 7¾ cents, tank car lots, at refineries, but trading has been light and the market tone is easy. Kerosene is freely offered at 7¼ cents, and it would not be surprising to see the posted price lowered to that level.

Jobbers are unwilling to accumulate kerosene in any volume, anticipating a general reduction in prices, and hand-to-mouth buying is very much in order. Refiners here are still experiencing sharp competition in areas where freight rates enable Pennsylvania refiners to enter into direct competition.

### Tank Wagon Kerosene

Price changes are lacking in this division of the market. Volume has been rather light, and a drop in the refinery posted price would be reflected in tank wagon schedules, under the present marketing plan of principal marketers.

### Fuel Oil

Trading volume has been well maintained in the fuel oil market, and refiners continue to quote bunker "C" unchanged at $1.15 per barrel, bulk, at refinery terminals. Contract withdrawals by the large steamship companies are holding up well, and spot sales are also of fair proportion.

With the fuel oil market strengthening at the Gulf, and arrivals of South American and California fuel oils moving into distributing channels against term contracts, the East Coast market for this oil is in more stable position than for the past year or so, and the outlook for a steady market over the balance of 1930 is favorable.

### Diesel Oil

A firmer market has developed for this oil, and there is still some talk regarding the possibility of an advance of 10 cents per barrel in the price basis at eastern terminals. Refiners continue to quote $2 per barrel, in bulk at terminals, but most sellers in writing 1930 business specified a top of $2.10 and an inside figure of $2 per barrel in their contracts.

While marine sales continue to make up the bulk of the business in Diesel oil, industrial installations are on the increase, and refiners believe there is a big field for Diesel oil in these lines.

### Gas Oil

Spot 28 plus recycled gas oil continues quoted at 5¼ cents per gallon, but this price is still the exception rather than the rule. The market is quoted as low as 4½ cents at refineries by some sellers, but the average price is around 4¾ cents.

Demand has eased off further, and refiners anticipate a rather slow market throughout the summer, with a probable substantial increase in surplus stocks. Reports indicating the early construction of a natural gas pipe line to the New York area have come in for considerable attention among gas oil sellers.

### Paraffin Wax

The market continues in easy position, with volume of business small. Fully refined 133-135 is lower at 4¾ cents per pound, with 135-137 a.m.p. also weaker at 5⅛ cents. The lower melting points are without change, but the market undertone is soft, and some price shading is still being done in some quarters.

Domestic wax buyers are apparently well covered on their requirements for the current quarter, and spot buying is almost entirely of hand-to-mouth character. Buyers were in the market a few weeks ago for their third-quarter requirements, but found refiners unwilling to book so far ahead.

Export operators are shopping the market rather closely, and are pressing for price concessions when placing actual business. A good deal of the export buying is being done out of the Gulf, prices at that point being substantially under those quoted in the East on many grades.

### Lubs

The market for cylinder stocks sold off, refiners being unable to hold their market in the face of continued light buying. Spot 600 steam refined, in barrels, is available at 30½ cents per gallon, off 1 cent, with 635 and 650 showing similar declines at 32½ and 36½ cents, respectively. Warren E, 600, is also lower, at 38 cents, down a half cent. Oil City E showing a corresponding drop at 37 cents.

Red and pale oils are without quotable change. Refiners note a well sustained demand for all grades, and tank car movement is well up to average for this season.

Refiners report a steady increase in demand for packaged lubricating oils, the start of the summer motoring season having brought about a heavy demand from the jobbing and retail filling station trades.

### Gulf Export Market

Continued quiet has prevailed at the Gulf, so far as open market trading is concerned, with the price situation unchanged. Operators have been looking for a substantial buying movement for shipment to Great Britain and France, but this demand has been slow in developing. Large American companies with foreign marketing subsidiaries are shipping motor fuel in large volume into export channels, but little of this business is finding its way to the open market. There were no new cargo inquiries reported, and no actual fixtures.

Kerosene has also been in quiet position at the Gulf, with prices remaining unchanged.

Fuel oil has strengthened further at the Gulf, with sellers quoting 80 cents in cargo lots, all of the 75 and 78-cent material apparently having been withdrawn from the market.

Considerable quantities of paraffin wax are moving into export channels through New Orleans and Houston at prices substantially under those quoted locally. The heavy offerings of low-priced wax in the Southwest have tended to make for a dull market in the East.

Venezuelan crude oil is in strong position, with little available and current asking prices around 90 cents per barrel, f.o.b.

The market for Mexican crude has eased off a little, offerings being somewhat more liberal. This is attributed to a temporary oversupply on the part of one or two sellers, and is not a general condition.

There is still some talk regarding the possibility of an advance in Gulf gasoline and kerosene prices following the next regular meeting of the export association, but nothing definite is known yet.

### Petroleum Exports

Routine export movement of refined products was again reported from New York. Deliveries against standing contracts are accounting for much of the current volume, new business continuing of hand-to-mouth nature on most products.

Cased gasoline has been moving in better volume, export operators evidently looking for an advance in quotations, in line with the firmer market for domestic gasoline. Movement of cased kerosene continues relatively small.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

| | Week Ended | | |
|---|---|---|---|
| | May 10 | May 3 | Apr. 26 |
| Gasoline | 61,000 | 220,000 | 505,000 |
| Naphtha | 847,000 | 964,000 | 3,000 |
| Kerosene | 41,000 | 50,000 | 1,200,000 |
| Fuel oil | 120,000 | 10,000 | 257,000 |
| Lubricating oil | 1,479,000 | 1,240,000 | 4,836,000 |
| Petroleum, refined | 1,527,000 | 1,758,000 | 210,000 |
| | Pounds | | |
| Petrolatum | 59,000 | 33,000 | ..... |
| Paraffin wax | 1,588,000 | 1,050,000 | 1,686,000 |
| Refined | ..... | 846,000 | 4,000 |
| Scale | 961,000 | 1,125,000 | 143,000 |
| Lubricating grease | 1,045,000 | 1,095,000 | 700,000 |

There has been a good movement of refined petroleum, under which classification gasoline and kerosene fall, with the Far East taking stocks in a fair way. Export operators in this area are watching the gasoline and lubricating oil markets rather closely, in anticipation of an upswing in prices. This advance, when it finally materializes, is expected to precipitate a rather broad export buying movement.

### Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended May 10 totaled 1,851,000 bbls., a daily average of 264,428 bbls., compared with 1,955,000 bbls., a daily average of 279,286 bbls. for the week ending May 3 and a daily average of 268,035 bbls. for the four weeks ended May 10. Details follow:

(Barrels of 42 Gallons)

| | |
|---|---|
| At Atlantic Coast Ports— | |
| Baltimore | 80,000 |
| Boston | 157,000 |
| New York | 1,108,000 |
| Philadelphia | 205,000 |
| Others | 219,000 |
| Total | 1,769,000 |
| Daily average | 252,714 |
| At Gulf Coast Ports— | |
| Galveston district | 52,000 |
| New Orleans & Baton Rouge | 30,000 |
| Total | 82,000 |
| Daily average | 11,714 |
| At all United States Ports— | |
| Total | 1,851,000 |
| Daily average | 264,428 |
| Daily average four weeks | 268,035 |

Distribution of total imports is as follows:

| | |
|---|---|
| Crude | 1,167,000 |
| Gasoline | 461,000 |
| Gas oil | 42,000 |
| Fuel oil | 180,000 |

Gasoline imports for the week, totaling 461,000 bbls., showed a substantial increase over the 275,000 bbls. imported in the previous week, and with the start of peak gasoline consumption at hand in the United States, it is expected that import totals will continue to run substantially in excess of those for previous years. The South American product is moving into consuming channels through organized distributing outlets, and it is not believed the foreign motor fuel will constitute any problem in the open market in this country.

### California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf

Coast ports for the week ended May 10 totaled 263,000 bbls., a daily average of 37,571 bbls., compared with 517,000 bbls., a daily average of 73,857 bbls. for the previous week and a daily average of 50,607 bbls. for the four weeks ended May 10. Details follow:

(Barrels of 42 Gallons)

| | |
|---|---|
| At Atlantic Coast Ports— | |
| Baltimore | 49,000 |
| New York | 76,000 |
| Philadelphia | 114,000 |
| Total | 239,000 |
| Daily average | 34,143 |
| At Gulf Coast Ports— | |
| Total | 24,000 |
| Daily average | 3,428 |
| At Atlantic and Gulf Coast Ports— | |
| Total | 263,000 |
| Daily average | 37,571 |
| Daily average four weeks | 50,607 |

Distribution of total California oil receipts is as follows:

| | |
|---|---|
| Gasoline | 263,000 |

## MODERATE MOVEMENT IN CHICAGO AREA

(Continued from Page 166)

many contracts will have to be renewed. These were originally due to end at the beginning of the year but were extended for some months when the margins were changed to make up for the decrease in the spread between the tank wagon and the normal station prices. There is an insistent demand from the jobbers for a contract with a 6-cent guarantee below the station price. The major refiners claim it is impossible and cannot be granted but each one hast lost some contracts to some refiner who was willing to try and make such a 6-cent contract pay. Some of the larger marketers are also showing more enterprise in entering into yearly contracts and some claim to have signed up quite a number. Probably their best prospects are among those jobbers who have well established brands of their own which they wish to maintain and do not wish to adopt the advertising or the brands of even the best of refiners. They believe that in their own community their own brands are worth much more to them than any advertised brand of gasoline or even of motor oils. There are arguments both ways but it is among these that some of the marketers are working and they make guarantees which are supposed to include the sums spent for advertising of the refiner's brands.

## CANADIAN FIELDS

(Continued from Page 72)

"wet" gasser in the world. Imperial Oil, Ltd. will take the crude naphtha production.

Alberta Pacific Consolidated's No. 2, LSD 5, Section 20-19-2w5, has resumed drilling at 5,742 feet with some wet gas. In Section 16-19-2w5, Homestead Oils' No. 1, LSD 5, is drilling 360 feet in the lime at 4,625 feet, with some wet gas. Merland Oil Co.'s No. 1, Section 27-18-2w5, is drilling below 4,657 feet with some gas production just above the lime.

In the South Turner Valley, two Imperial tests have got the Dalhousie sand horizon, about 250 feet above the lime. Advance Oil Co.'s No. 5-A, LSD 16, Section 19-19-2w5, got this horizon at 5,760 feet and is drilling at 5,775 feet with prospects of establishing a depth record. Location is some distance north and west of the Home producers.

In the Central Turner Valley, Royalite Oil Co.'s No. 19, LSD 5, Section 6-20-2w5, is at 5,020 feet and testing production from the lime. It appears good for around 7,000,000 feet a day and will likely be shot. In Section 12-20-3w5, British Dominion Oil Development Corp.'s No. 2 is maintaining a steady production around 100 bbls. a day from the lime.

### Prospects to the East

The new area for wildcatting seems likely to be opened east of the Turner Valley Field, with a prospect of one or more tests being drilled by eastern Canada interests this season. Stewart Throop, M.E.I.C. of Montreal has examined this area exhaustively for Montreal interests and the prospects are summed up in the following passages from one of his recent reports:

"The Turner Valley Field or structure is an intensely folded series of sedimentary rock occupying the nose of a thrust fault from the west, and in places overturned, having a strike approximately north 30° west. There are several oil producing horizons but the source of the oil and the most productive horizons have been, and will continue to be, found in the porous sections of the great limestone beds underlying the whole area. Where local conditions have been favorable, the oil has migrated to and accumulated in these porous limestones. Due, however, to the faulted and broken nature of the Turner Valley structure, probably a great deal of oil has in the past escaped from this field and been lost.

"Immediately to the east of this structure and roughly parallel with it lies the first unbroken anticline east of the mountains. The geological column of this anticline is undoubtedly similar to that of Turner Valley, but it has not suffered the same intense degree of folding, squeezing and fracturing that was responsible for the loss of great amounts of oil from the accumulations in Turner Valley Field proper.

"In this anticline, particularly where local domes occur, it is reasonable to expect large accumulations of oil and gas in these domes at the productive horizons in the limestone.

"Migration of oil and gas to these domes probably was freer and over greater areas than in the Turner Valley, and being better seated with unbroken cap rock, these accumulations have probably retained their volume and suffered little or no loss through further upward and lateral migration by way of fractured or broken zones in the underlying strata."

### Highwood Tests in Lime

In the foothills test, the Highwood structure, south of Turner Valley, is the center of interest at present. Here, three tests are now working in the Madison limestone which has been encountered at considerably shallower depth than in the Turner Valley Field. If the faulted conditions which led to abandonment of Imperial Oils' No. 1 Highwood last year do not reoccur, there is a strong probability of interesting developments on this structure in the near future.

The most advanced of these tests is Western Alberta Oil Co.'s No. 1, drilling on Nordon Corp.'s acreage in LSD 11, Section 7-17-2w5, in the southeast section of the field. This test got the lime at 3,132 feet and is now drilling around 3,505 feet in a porous horizon after encountering a strong show of 42 gravity crude. This is the first crude encountered in the Madison, which in the Turner Valley yields 73° naphtha.

Some 12 miles north and west, Northwest-C. & E.'s No. 1, LSD 8, Section 35-18-3w5, got the lime at 2,483 feet and is standing cemented at 2,500 feet. This test is being drilled by Imperial Oil, Ltd. Five miles south of this test, Hudson's Bay Oils' No. 1 Highwood, LSD 8, Section 1-18-3w5, got the lime still higher at 2,150 feet but owing to caving in the poker-chip shales was cemented back to 2,048 feet and is now drilling at 2,085 feet. This would indicate that the lime reaches a high point on this structure somewhere between Northwest's No. 1 and Western Alberta's No. 1.

### Test for Willow Creek

Arrangements are being made for a test of acreage on the Willow Creek structure south of the Highwood wells. Extensive acreage is held in this area by Alberta Associated Oils, Ltd. of Calgary. This company, organized at the time of the first Calgary boom in 1913 drilled a test in Section 7-16-2w5, which got a strong show of high grade crude oil. Owing to financial difficulties resulting from the war the company was unable to finish the test. Later Imperial Oil, Ltd. deepened it as the Christie well, but owing to casing troubles abandoned work at 2,600 feet. Subsequently Imperial Oil, Ltd. drilled two tests considerably farther south, in the Rice Creek area, Township 14-2w5, No. 1 being abandoned at 5,747 feet and No. 2 at 3,600 feet. None of these tests apparently reached the lime.

Surface seepages of oil and gas near Meinsinger Lake, in Township 15, midway between the Christie and Rice Creek wells, and study of the old logs, are thought to indicate a strong prospect of more favorable results in Township 15, and it is probable that a test will be undertaken this season north of Meinsinger Lake.

Shareholders of Twin Dome Oils, Ltd., held their annual meeting recently at High River, Alberta, when arrangements were discussed for the resumption of work on Twin Dome's No. 1, Section 16-21-28w4, shut down last fall at 1,400 feet. Officers elected are: President, E. N. Sleeman; vice president, Jacques de Foras; managing director, J. Hageman; secretary-treasurer, Jack Casteel; directors, Isaac Laycraft, Frank Watt, D. Duddenhoffer, William Fisher.

### Red Coulee Field

In the International Red Coulee Field, Cosmos Petroleum Co.'s No. 1 Thacker, Section 2-37-4w, is reported making 350 to 380 bbls. a day. Cosmos' No. 2 Thacker, same section, is spudding in. Hannah-Porter Oil Co.'s No. 1, SE Section 2-37-4w, is drilling at 230 feet after cementing 12½-inch surface pipe. Rice & Radigan's No. 1, SW Section 1-37-4w, is drilling below 240 feet after cementing off water at 226 feet. Monalta Oil Co.'s No. 3 Buckley, Section 1-37-4w, has spudded in. Mid-Continent Oil & Refining Co.'s No. 2 Farbo, Section 2-27-4w, is resuming after recementing at 2,045 feet; water well is being drilled for Mid-Continent's No. 3, which is rigging up. Huso Brothers' No. 1, NE Section 1-37-4w, is drilling at 2,270 feet. Ohio Oil Co.'s No. 1 Owen, NE SW Section 2-37-4w, a quarter mile west of Cosmos' No. 1 is spudding.

Askalta Oils, Ltd., of Calgary is preparing for a cable-tool test on the Montana end of the structure about a mile south of Cosmos' No. 1 in Section 11-37-4w. Vanberta Oils, Ltd., of Calgary, which has unfinished tests on the New Black Diamond and South Turner Valley structures, has secured 80 acres of the Buckley ranch and will spud in a test about July 1.

### Alberta End

On the Alberta end of the structure, Commonwealth Petroleums' No. 1, LSD 10, Section 3-1-16w4, is reported drilling close to the Sunburst sand at 2,392 feet after some trouble with caving. Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, is drilling at 710 feet. Southern Alberta Exploration's No. 1, LSD 8, Section 3-1-16w4, is at 1,218 feet and drilling. Alberta Pacific Consolidated's No. 1, LSD 2, Section 3-1-16w4, is drilling at 2,050 feet. Capitol Oil & Gas Co.'s No. 1, LSD 3, Section 21-1-16w4, is drilling at 325 feet after cementing surface casing. Dalco Oil & Gas Co.'s No. 1, LSD 4, Section 11-1-16w4, is drilling at 2,140 feet. Ko-Top Oils' No. 1, LSD 1, Section 2-1-17w4, standing at 1,650 feet, is overhauling rig preparatory to resuming.

Some new locations are being made on the Alberta side. Russell V. Johnson has spotted Caledonia Oil Co.'s No. 1 in Section 6-1-16w4, and Celtic Oils' No. 1, to be financed by Vancouver capital, has been located in Section 17-1-16w4. Dixie Oils' No. 1 has been located in Section 18-1-16w4, and contract is being let, test to spud in by June 1. Shasta Oils, Ltd., of Calgary has arranged with Hol-Gar Petroleums, Ltd., to drill four tests in S half, LSD 1, Section 11-1-17w4, and has secured LSD's 5 and 6 in the same section. Camp and derrick are up and equipment on the ground.

Climax Oils, Ltd., of Calgary has a location in Section 14-1-16w4. Cellar is dug, derrick going up, and contract being let. James Aiello is president and managing director.

T. A. Link, head of the geological department of Imperial Oil, Ltd., recently investigated development work in the Red Coulee Field, and it is unofficially reported the Imperial company may interest itself in development. The first well drilled on the anticline, Imperial's Red Coulee No. 1, put down in 1922 west of the present Vanalta's No. 1 producer, got a strong show of crude but later drilled into water and was abandoned and the acreage allowed to lapse.

Seymour Oils, Ltd., of Calgary has spotted its No. 1 test in Section 2-1-16w4. Officers are: President, A. V. Seymour; secretary-treasurer, E. J. Parker; directors, Dr. H. E. Young, Frank O. White, O. B. Allen.

On the Mowmas structure north of the Blood Reserve, Teapot Dome Oils' No. 1, Section 31-9-23w4, has camp finished and is waiting for equipment.

### Hudson's Bay Operations

In addition to the test now drilling on the Highwood structure, Hudson's Bay Oils, Ltd., has No. 2 test in the Lomond area, Section 26-17-18w4. Owing to caving, the hole has been cemented back from 2,020 feet to 1,800 feet. Drilling is resuming.

In the Keho Lake area, Hudson's Bay No. 1 Keho, LSD 2, Section 17-11-22w4, has camp and cellar finished and is working on steel derrick.

On Paint Earth Creek, in the northern foothills, Hudson's Bay No. 1 has water system with engine and pumps installed, camp erected and cellar dug. Location is in LSD 5, Section 27-39-15w4.

In the Raymond district, southern Alberta, Nordon Corp. is starting its fourth structure test on acreage about 8 miles south of Raymond. It is planned if necessary to put down 30 core-drill tests. The structure is thought to run east and west directly across and through the foothills of the Milk River ridge.

On the Montana side an interesting test 8 miles north of the nearest Kevin-Sunburst producer and 5 miles south of the boundary is being started by the Ernbright syndicate on the Beaupre lease, SE SE Section 32-37-1w.

### Viking Gasser

In the Viking gas field east of Edmonton, Northwestern Utilities' No. 19 on the James Hennessey farm, 8 miles north of Viking, has finished in the Viking sand with 7,150,000 feet a day.

### Saskatchewan Tests

In Saskatchewan, Simpson Oil Co.'s No. 1, Section 9-20-25w2, is reported resuming at 2,200 feet.

It is reported that Anglo-Dutch Oils, Ltd., of Calgary is preparing to drill a test in Saskatchewan just south of Empress on the structure mapped by Dr. C. C. Coulter, who will have general charge of operations.

## TEXAS OFFICIALS VISIT FIELDS

A party of officials of The Texas Company and associated companies including R. Ogarrio, vice president of The Texas Company, his assistant, V. L. Porter, and his secretary, E. D. Hopkins; R. F. Baker, New York, chief geologist; J. A. Bermingham, Los Angeles, Calif., vice president of The Texas Company of California; and A. R. Wilson, Denver, Colo., vice president of the Texas Production Co., have been making a tour of Gulf Coast properties of the company. While in Texas they have been accompanied by W. V. Bowles, division manager of production of the Gulf Coast; L. E. Barrows, division manager of production of Central and West Texas; R. C. Stewart, division manager of North Louisiana and Arkansas; J. L. McMahon, division manager of North Texas, and E. R. Filley, division manager at Tulsa. F. C. Sealey, assistant division manager of production, Gulf Coast, and Paine Pannill, superintendent of production, also accompanied the party through the Gulf Coast. The party were guests of the Houston office at a banquet during their stop-over at Houston.

## SHOULD BE PLUS SIGN

In the article by R. M. Redding of the Dallas Gas Co. on forecasting demand, published in The Oil and Gas Journal of May 8, page 230, the formulas should read:

Population [6,780 + (degree day deficiency) 3.3] = annual domestic requirement in cubic feet of 1,000 B.t.u. gas.

Maximum day domestic demand = population [21 + (D.D.D.) 3].

# Natural Gasoline Manufacture

## Several Phases to Gas Collection for Operation of Plant

By Paul G. Hardie
Midwest Refining Co.*

A thorough survey was made of the territory in Wyoming surrounding the booster stations, of which Midwest Refining Co. now has 20 in operation, as to ownership of the land and the quantity of gas that could be expected to be produced from this area. With these data assembled, maps were drawn showing the main trunk lines leading from the boosters along the various section, one-half section, and one-sixteenth section lines until they finally terminated in the stub lines which ended in the center of every 40-acre tract from which gas was to be taken. Knowing the quantity of gas that the wells produced, the size of pipes necessary to insure an equal distribution of vacuum was figured and laid accordingly. The largest sizes, of course, started at the plants and were graduated

**A Drip Cart.**

**Note the weight. The driver throws this on the ground. Should the cart catch fire or horse become frightened then the cord to which the weight is attached releases the animal from the shafts and he can run away with safety. A dragging chain is provided to carry off static electricity.**

down until the lines leading from the stub lines to the casinghead of the wells themselves were only 2-inch pipe. Very often it was found that certain wells produced more gas than one 2-inch line would carry, so the original line was either paralleled with another 2-inch line of replaced by 3 or 4-inch lines as was found necessary.

All the oil companies of the field had entered into an agreement that the maximum vacuum to be delivered to the wells should be 4 inches (mercury). As the gas production on certain sections of the field went down, this 4 inches limitation necessitated the installation of casinghead back pressure regulators.

It is sufficient at this time to say that the booster stations are equipped with direct connected 80 horsepower Clark or Bessemer units. The compressor cylinders vary in size from 14-inch to 22½-inch diameter. The smaller bores are located the farthest from the main gas plant as they are capable of carrying a greater discharge pressure. Some of the areas have dropped off in gas production so that two or three units can handle all the gas, whereas, in other areas it has been necessary to install as high as seven engines, but the general average is four units to the station. Plant 5, which was originally built to furnish fuel gas to the field, has been converted into a booster by connecting its discharge lines into the other booster discharge lines leading to the main gas plant. This plant is equipped with seven twin-cylinder 160 horsepower directed connected Cooper engines.

Three of the points of greatest importance in connection with collecting casinghead gas are: Safety of men and equipment, quantity of gas handled and quality of gas.

### Summer Months

During the summer months it is not necessary to have a large number of men on the collection department payroll. Most of the work consists of repairing engines, moving and installing new drips and repairing gas lines. This allows us to pick experienced men and the accidents have entirely disappeared. It is a different story in the winter. All of the wells are producing a water saturated gas, with the result that every line has an opportunity of freezing. The ice must be thawed and a new group of men must be hired to do this work. These men to a great extent are inexperienced in this line of work with the result that they must be thoroughly instructed in every detail. These details are so numerous that the following bulletin is printed to show exactly what the line-walkers and drip-cart drivers have to learn.

"The following are some of the "do's and dont's" that should be applicable to every collection department man who is engaged in thawing and bleeding lines or hauling gasoline.

"1. Always examine ground where you wish to start a fire, for gasoline or oil, particularly around drips and bleeder and make sure there is none under the snow.

"2. Always burn all gasoline blown out of bleeder and drips before it if safety will permit. This will eliminate the possibility of trouble on your next visit to this place and will also remove the danger of some one else accidentally igniting it.

"3. After thawing a bleeder or line be very sure that the fire is all out before opening it and particularly note that there is not a fire burning on the snow that you cannot see.

"4. When lighting any fire be sure that you are on the windy side of it; that is, standing between the wind and the fire you are about to start.

"5. Keep a constant watch for gas leaks as this will enable us to keep out the air on vacuum lines and will save

(Continued on Page 179)

*Mr. Hardie is superintendent of the gas collection department.

## Construction and Operation

### STARTING THE PLANT*

When the final inspection of the construction of the plant indicates that the auxiliary, power, distillation unit, lines, storage, etc., are in readiness, several engines previously "broken in" are started up on air for the purpose of obtaining a pressure on the gas and oil system to discover such leaks as may be in the system. Before going on load, the machines should be idled a minimum of 20 hours and then the load thrown on gradually. Considerable expense in the future can be avoided on the score of bearings, pistons and cylinders. During this initial operation, the lubricating of the engines should be given special attention.

If the lines have not been tested with pressure gas, air from the compressors is turned in and men started to walk the lines to repair all leaks at collars, unions, meters, etc. The yard force, more especially the foremen, will go over the entire system, assigning crews to repairs as fast as they are found. That plant is unique, however competent the supervision, that does not show numerous leaks at welds, joints and unions. Thereupon, the system is pressured to about 125 per cent of the operating pressure, and, when fully tested out, the air is released.

Thereupon, absorption oil is fed into the system, and the idling boilers are put full on the line. Gas is turned from separators into the lines and the by-pass to blow-off at the plant is opened to purge the gas system of all air. The oil circulating system is then put into operation and the by-pass is closed, throwing the gas through the absorbers. The plant is in operation.

The pressure on the absorption system has been previously determined by the selection of compressors and is maintained by a back pressure regulator installed behind the absorbers. Another regulator, located on the residue line, controls the maximum pressure on the field fuel system and permits the excess to escape through a blow-off, or to feed into the transmission line to a carbon black plant or booster station. The regulator behind the absorber protects the plant against varying processing pressures during those periods when the "take" of residue gas by leases is at a higher rate than the delivery by plant compressors. This condition is not generally experienced until gas shortages in the field come into the picture.

### Still Pressure

The still pressure is likewise determined in advance and the regulator on the uncondensed vapors set. This pressure may be some 25 pounds. At this pressure part of the light fractions are not condensed in the vapor coils. These vapors containing also some heavier vapors are passed through the regulator to a reabsorber or recompressor, as the case may be. If a reabsorber is used, that oil circulation and pressure are maintained which will give the desired extraction of the light fractions which can be absorbed by the particular grade of gasoline that the plant is intended to produce. Once the requisite oil circulation is found, it is not changed except on a redetermination of the requirements.

When enough gasoline has been produced, the rectifier is charged and pressures and temperatures of the designer used to obtain specification gasoline. The details of column operation will be discussed in a later paper. The stabilized gasoline is then pumped to the treating plant where, by a series of tests, the chemist determines the extent to which the particular chemicals will be used. The operators, thereafter, use this rate as a guide, but continuously watch the treating to make sure that changes in the gas and saturation of the treating agents do not throw the gasoline off specification.

No plant is started with 100 per cent efficiency. But any well-designed plant should be on full stream and settled to normalcy in from a few days to a week. After a month of operation, the plant should be in position to remove all extra hands, for the burden of surplus labor during a protracted "starting-up" period may easily become expensive.

*Thirteenth of a series of articles explaining the inner workings of a natural gasoline organization. The series was prepared by an operator actively engaged in all phases of construction and operation.

## FISHER AND ASSOCIATES ORGANIZE BART COMPANY

A group of executives of the Phillips Petroleum Co. has organized the Bart Products Co. with F. E. Fisher as vice president and general manager, and will soon begin manufacturing instruments and special apparatus for use in the oil industry. The first unit of the plant is nearing completion and is located at Bartlesville, Okla. Two other units will be added as the program of expansion warrants.

The need for such facilities was made apparent as the need for special labora-

F. E. Fisher

tory and semicommercial apparatus materialized within the Phillips organization as the research problems of the company increased. This same need has been apparent in other companies as well. F. E. Fisher, as head of the Bartlesville laboratories for the Phillips company, established a work shop in his home. The duties of the shop expanded until three men were employed. The need for the further expansion of these facilities prompted Mr. Fisher to leave the Phil-

(Continued on Page 179)

## ANNOUNCE RULINGS AS TO GASOLINE ROYALTY

The attorney general of Texas at the request of the University of Texas has made several rulings in regard to natural gasoline produced on holdings of the university. He held last week that the university was entitled to recover one-eighth of the value of casinghead gasoline under outstanding leases that contained no express stipulation for royalty on it, but provided royalty only on oil produced and for gasoline sold. The opinion was based on the ground that casinghead gasoline is a constituent of oil and in the absence of language specifying the royalty would be embraced by the provisions providing royalty for oil rather than the royalty provided by the lease for gasoline.

The opinion further held that the value of the casinghead gas for royalty purposes should be determined by its value at the well and that since casinghead gas at the well would be inclusive of its constituents of casinghead gasoline and residue gas, payment of royalty on such valuation would include any royalty that might be due for casinghead gasoline and residue gas derived from such casinghead gas.

The opinion will be the basis for the recovery of royalties on casinghead gas at the rate of one-eighth rather than one-tenth, as has been the practice in a number of instances. Recovery also will be sought of the difference in the royalties that have heretofore been paid on the one-tenth basis.

# Brief Items for Petroleum Refiners

## Refiners' Opinions Vary as to Use of Natural Gasolines

By M. H. Nolan
Producers & Refiners Corp.*

The manufacturers committee of the Western Petroleum Refiners Association in accepting an invitation to be present and participate in this convention by the presentation of papers, decided that it might be of interest to present the viewpoint of the refiners with regard to natural gasoline specifications, and particularly in view of the great amount of interest displayed in papers presented by members of the Natural Gasoline Association of America at a recent meeting of the refiners held at Shreveport, La.

At the outset, in preparing material for such a paper, it was the intention to elicit an opinion from each member of the refiners association by means of a questionnaire but due to the time necessary to complete such a procedure, the idea had to be abandoned and a more expedient method resorted to—that of arranging interviews with several of the representative members of the association. The opinions obtained as a result of these interviews were, as might be assumed, of a rather widely varying nature.

It is quite natural to suppose that the opinion of the individual refiner would, to a certain extent, be governed by his own particular situation, and in this regard we might divide refiners in three large classes. The first class consists of those refiners who are a part of the large integrated company, in close contact with the manufacture of natural gasoline with facilities and material available by which he has equipped himself with a thorough

*Annual convention, Natural Gasoline Association of America, May 20, 21 and 22.

(Continued on Page 180)

## SHELL NEGOTIATING FOR PARAGON REFINING

NEW YORK, May 20.—The Shell Petroleum Corp. is reported negotiating for the acquisition of the Paragon Refining Co., prominent independent refining and marketing company, with approximately 500 retail stations in Ohio and Michigan. Paragon has expanded its business during the past year with the acquisition of control of Valvoline Oil Co. and two years ago took over the Wayco Oil Co. which had hitherto been a distributor of Shell products. Paragon has a modern refinery with about 8,000 bbls. daily capacity at Toledo and through control of Valvoline has a 3,000-bbl. refinery at East Butler, Pa., a large wax plant at Warren, Pa., and grease plant at Edgewater, N. J. Pipe line holdings of Paragon and subsidiaries approximate 1,750 miles.

### PRUNTY WITH WARNER-QUINLAN

Peter Prunty, assistant general manager of the Standard Oil Co. of New York, has resigned his position and has become associated with the Warner-Quinlan Co. in a similar capacity. Mr. Prunty has been associated with Socony since 1904.

Entering the employ of the New York company as a truck driver, Mr. Prunty served successively as shipping clerk, warehouseman, invoice clerk and cashier. In 1917 he became general manager of the company's business in Newfoundland, being stationed at St. Johns, Newfoundland. He was made special agent in 1921 and in 1925 was appointed assistant general manager and field manager for the entire sales organization.

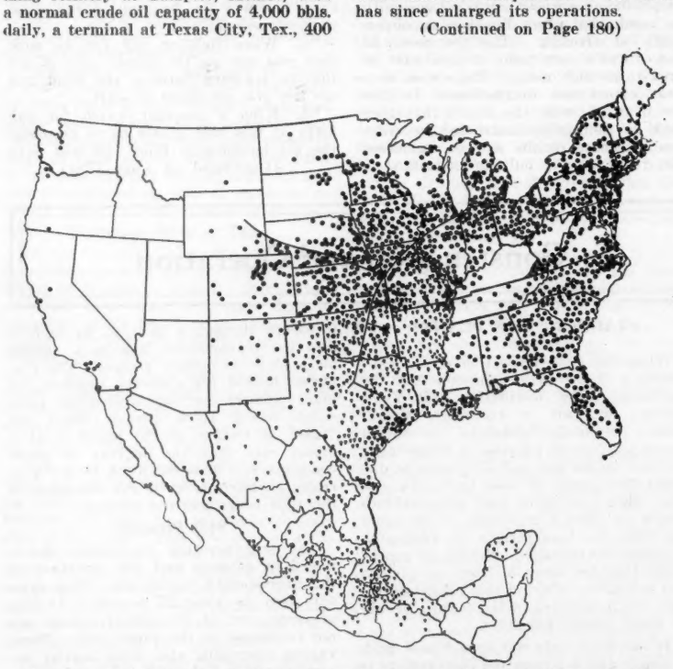
## SINCLAIR TO EXTEND MARKETING BY ACQUIRING PIERCE PROPERTIES

Sinclair Consolidated Oil Corp. has contracted to buy all of the assets and business of the Pierce Petroleum Corp., the transaction to take effect as soon as the contract is ratified by stockholders of the Pierce corporation. Payment for the properties will be in Sinclair common stock.

The assets to be taken over include 707 bulk distributing plants and 969 service stations in the United States, and 183 agencies in Mexico, 1,100 railway tank cars, a complete refinery at Sand Springs, Okla., having a normal crude oil charging capacity of 8,000 bbls. daily, a skimming refinery at Tampico, Mexico, with a normal crude oil capacity of 4,000 bbls. daily, a terminal at Texas City, Tex., 400 miles of pipe lines, and interests in several thousand acres of prospective oil lands. In addition to which, Sinclair takes over the net current assets of Pierce, amounting to over $5,000,000 on December 31, 1929.

The Pierce corporation, which is one of the oldest oil companies in the United States, was primarily a marketer of refined products in its early history. The company, formerly known as the Pierce Oil Corp., was reorganized a few years ago and Edwin D. Levy, a well-known railroad and oil operator, was placed in charge as president. The corporation, which has its headquarters in St. Louis, has since enlarged its operations.

(Continued on Page 180)



*Map showing distribution of Sinclair company after acquisition of Pierce properties. Circles indicate Sinclair distributing points and triangles, Pierce points. The stars show refinery locations.*

## STATIONS IN CHICAGO MUST PAY CITY TAX

CHICAGO, May 19.—Some years ago the city council passed an ordinance taxing owners or operators of service stations $50 a year for each 1,000-gallon tank maintained. In 1928 the tax was paid by 1,600 stations. The owners brought suit for the abolition of the tax and obtained an injunction and since that time no taxes have been collected. Hearings have been held before a master in Chancery in the Circuit Court here.

The master's report which has been returned to the court sustains the right of the city to levy such a tax. When approved by the court the ordinance will become operative although a further appeal might be taken on the question of the validity of the act. The number of stations has been greatly increased. The sum collected under this ordinance in 1928 was approximately $213,000.

### GASOLINE TAX SUIT

SPRINGFIELD, Ill., May 19.—The Standard Oil Co. (Indiana) has redocketed its suit for the recovery of $224,873 paid under protest under the gasoline tax law of 1927 which was declared invalid. The oil company in redocketing the suit filed an amended bill to which the State replied with an answer, a cross bill and interrogatories which the court gave the company 30 days in which to file and answer. The contention is largely around the question of who really paid the tax and who is entitled to a refund if anyone. It is probable that the court on receipt of the reply of the plaintiff to the State's questions will appoint a master to take evidence on the points as to who paid the tax and to whom it should be repaid. The circuit court in this county in the first decision awarded a refund to the Standard Oil Co. (Indiana), but on appeal to the State Supreme Court the decision was reversed and the case remanded. One of the contentions of the company is that of the amount claimed $2,370 was taxes paid on gasoline used in its own motor equipment and that one-third of the remainder was paid by motorists who did so under filed protests. The attorney general's office announced that another test case filed by the Richardson Lubricating Co. of Quincy, Ill., will be returned to the court in a few days. In this case the tax was not paid under protest.

## INSTITUTE GIVES DATA ON CRACKED GASOLINE

NEW YORK, May 17.— Widespread approval has been given the American Petroleum Institute's proposal to publish weekly figures showing the amount of "cracked" gasoline produced and the stocks of gasoline in storage at bulk terminals and in water borne transit. Letters promising the co-operation of oil companies throughout the country in sending in weekly reports in answer to the Institute's recent request are being received in every mail.

The date for publication of the first report, which will be made on Tuesdays with the established report on production and refining activities, has not yet been determined. On the basis of returns so far, however, it is believed that a representative report will be available somewhat earlier than expected, every company so far having approved the plan. Many already are reporting these figures.

Reports on "cracked" gasoline production will enable the industry and others to ascertain weekly activities in that line without waiting for the monthly report of the United States Bureau of Mines, it was explained. Figures on gasoline in storage will provide for the first time a means of ascertaining how much motor fuel is available at points other than refineries. As storage figures for the corresponding week a year ago also will be reported, it will be possible to present an accurate comparison.

## EXPORT ASSOCIATION MAKES NO REVISION

NEW YORK, May 20.—Reports of a pending advance of the Gulf export gasoline and kerosene market were proved unfounded when the Export Association group met here May 16 and adjourned without making any revision in posted prices. While no announcement was made concerning the business transacted at the meeting, in keeping with the association's policy of classing each meeting as an executive session, it was learned that the directors of the association heard a report on the European oil situation by James A. Moffett, Jr., vice president of the Standard Oil Co. (New Jersey), who has just returned from abroad. A routine program of regular business completed the meeting.

### WISCONSIN OIL MEN MEET

H. A. Rohde of the Rohde-Deuster-Hinckley Co., of West Allis, Wis., was elected president of the Wisconsin Petroleum Association at the annual meeting last week. Walter L. Zust, Interstate Oil Corp., LaCrosse, was elected vice president; Elmer Pedley of D. P. Pedley & Sons, Kenosha, secretary; M. G. Peeters, Wadhams Oil Co., Milwaukee, treasurer; Charles Lockwood, of the Lockwood Oil Co., Kenosha, was the new director.

The retiring president, J. M. McLaughlin of Bartles-Maguire Oil Co., was given a handsome traveling bag by the membership of the association.

### LAUREL PLANT STARTS

Trial runs have been made at the new refinery of the Laurel Oil & Refining Co. located at Laurel, in Yellowstone County of southern Montana. It is expected that the plant will be in regular operation by June 1.

The new plant which has a capacity of 5,000 bbls. daily is operating with crude oil from the Oregon Basin. The plant products will be distributed in the Rocky Mountain area. The general offices are located in Portland, Ore.

# G-R Bentube Sections

## from 1 to 822 units used by 159 plants

MANY users of G-R Bentube Atmospheric Cooling Sections have standardized on them because of their exclusive scale-shedding feature, which prevents scale from building up, no matter how poor the cooling water may be.

Others use these sections for various condensing and cooling services because of their adaptability and ease of erection, dismantling and transportation, which permits them to be moved about the plant as required by operating conditions.

Still others find their compactness and effectiveness an important aid in minimizing the space required for installation, permitting small basin area under cooling towers and small tanks for submerged operation.

These are some of the important advantages that explain the rapidly increasing use of G-R Bentube Sections. If you are not now securing the benefits of this unique apparatus in your condensing and cooling processes, write for bulletins describing these sections.

The G-R Bentube Section is patented and it is our intention to prosecute all infringements. A suit, charging infringement of our patent No. 1,617,083, has been brought in the U. S. District Court at Wilmington, Delaware.

**The Griscom-Russell Co., 285 Madison Ave., New York**
*Branches in all oil centers.*

**HEAT EXCHANGERS**
**CONDENSERS**
Sub-cooling—Partial—Reflux
Shell-and-Tube, Atmospheric, and Condenser Box Types
**COOLERS**
Liquid—Gas—Jacket Water
Shell-and-Tube, Atmospheric, and Condenser Box Types
**OIL HEATERS**
**LEVEL CONTROLLERS**

# Griscom-Russell

## Heat Transfer Apparatus

# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**

## GASOLINE AND NAPHTHA

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 50-52 450 endpoint | .06¾ | .07¼ | .06¾ | .07¼ | .07 | .07¼ |
| 56-58 450 endpoint | .06¾ | .07 | .06¾ | .07¼ | .07 | .07¼ |
| *58-60 437 endpoint (U. S. Motor) | .075 | | .075 | | .075 | |
| *60-62 437 endpoint | †.07¼ | .07½ | †.07¼ | .07½ | †.07¼ | .07½ |
| *60-62 400 endpoint | †.07¼ | .07½ | †.07¾ | | .0755 | |
| *64-66 375 endpoint | †.07½ | .07⅞ | .0812 | | .0812 | |
| 68-70 360 endpoint | .07¾ | .08¼ | .08 | .08¼ | .08¼ | .08½ |
| 64-66 437 endpoint (blend) | .06½ | .07 | .06¾ | .07 | .06¾ | .07 |
| **NORTH TEXAS—** | | | | | | |
| 56-58 450 endpoint | .06½ | .07 | .06½ | .07 | .06¾ | .07 |
| 58-60 450 endpoint | .06½ | .07 | .06¾ | .07 | .06¾ | .07 |
| 58-60 437 endpoint (U. S. Motor) | .06¾ | .07 | .06¾ | .07¼ | .07 | .07¼ |
| 60-62 400 endpoint | .07 | .07¼ | .07⅛ | .07½ | .07¼ | .07½ |
| 64-66 390 endpoint | .07¼ | .07½ | .07⅝ | .07⅝ | .07½ | .07⅝ |
| 64-66 375 endpoint | .07½ | .07¾ | .07½ | .07¾ | .07⅝ | .07⅞ |
| 68-70 360 endpoint | .07¾ | .08 | .07¾ | .08 | .08 | .08¼ |
| 64-66 437 endpoint (blend) | .06½ | .06¾ | .06½ | .06¾ | .06½ | .06¾ |
| ***NORTH LOUISIANA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .07¾ | | .07¾ | | .07¾ | |
| ***ARKANSAS—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .07¾ | | .07¾ | | .07¾ | |
| **PENNSYLVANIA—** | | | | | | |
| 52-54 Naphtha | .07¾ | .08 | .07¾ | .08 | .07½ | .07¾ |
| 54-56 Naphtha | .07¾ | .08 | .07¾ | .09 | .07¾ | .08 |
| 58-60 Gasoline | .08¼ | .08½ | .08¼ | .08½ | .08 | .08¼ |
| 60 Gasoline | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 62 Gasoline | .08½ | .09 | .08½ | .08¾ | .08½ | .08¾ |
| 64 Gasoline | .08¾ | .09½ | .09 | .09¼ | .08¾ | .09 |
| 68-70 350 endpoint gasoline | .09¼ | .09½ | .09¼ | .09½ | .09 | .09¼ |
| **CALIFORNIA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) domestic | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 50-52 450 endpoint (Naphtha) | .07 | .07½ | .07 | .07¼ | .07 | .07¼ |
| 56-58 450 endpoint | .06⅞ | .07⅛ | .07 | .07¼ | .07 | .07¼ |
| 58-60 437 endpoint (U. S. Motor) | .06¾ | .07 | .07 | .07½ | .07½ | .07¾ |
| 60-62 400 endpoint | .07¼ | .07⅝ | .07⅝ | .07⅝ | .07½ | .07¾ |
| 64-66 375 endpoint | .07¾ | .08 | .07⅞ | .08 | .07¾ | .08 |
| 68-70 360 endpoint | .08 | .08¼ | .08 | .08¼ | .08 | .08¼ |
| 64-66 437 endpoint (blend) | .07 | .07¼ | .07¼ | .07½ | .07¼ | .07½ |
| **GULF COAST (Export)—** | | | | | | |
| 58-60 (U. S. Motor) | .08 | | .08 | | .08 | |
| 60-62 400 endpoint | .09 | | .09 | | .09 | |
| 61-63 390 endpoint | .09¼ | | .09¼ | | .09¼ | |
| 64-66 375 endpoint | .09½ | | .09½ | | .09½ | |

*Louisiana, Arkansas, Mississippi and East Texas delivery.

## NATURAL GASOLINE

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .06½ | | .06½ | | .06½ | .06⅝ |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .06⅝ | | .06½ | | .06½ | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .06¼ | | .06⅜ | .06½ | .06½ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .06 | .06¼ | .06¼ | .06½ | .06½ | |
| Grade C, 80-92, 375 e.p., rec. 78% | .06 | .06¼ | .06¼ | .06½ | .06½ | |
| **NORTH TEXAS—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .06½ | | .06½ | | .06½ | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .06⅝ | .06½ | .06½ | | .06½ | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .06¼ | | .06¼ | .06½ | .06½ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .06⅛ | .06¼ | .06¼ | .06½ | .06½ | |
| Grade C, 80-92, 375 e.p., rec. 78% | .06 | .06¼ | .06¼ | .06½ | .06½ | |
| **NORTH LOUISIANA—** | | | | | | |
| Grade AA, 80-87, 375 e.p., rec. 90% | .06½ | .06¾ | .06½ | .06¾ | .06½ | .06¾ |
| Grade BB, 84-92, 375 e.p., rec. 85% | .06¼ | .06½ | .06¼ | .06½ | .06½ | .06¾ |
| Grade C, 80-92, 375 e.p., rec. 78% | .06 | .06¼ | .06¼ | .06½ | .06½ | |
| **CALIFORNIA—** | | | | | | |
| 75-78 375-390 endpoint | .06¾ | .07¾ | .06¾ | .07¾ | .06¾ | .07¾ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .06½ | | .06½ | | .06½ | |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .06⅜ | | .06½ | | .06½ | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .06¼ | | .06½ | | .06½ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .06⅛ | .06¼ | .06⅜ | .06½ | .06½ | |
| Grade C, 80-92, 375 e.p., rec. 78% | .06 | .06¼ | .06⅜ | .06½ | .06½ | |

## BURNING OIL

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 41-43 water white kerosene | .04 | .04¼ | .04⅛ | .04½ | .04¼ | .04½ |
| 42-44 water white kerosene | .04¼ | .04½ | .04⅜ | .04¾ | .04½ | .04¾ |
| **NORTH TEXAS—** | | | | | | |
| 41-43 water white kerosene | .03¾ | .04 | .04 | .04⅛ | .04⅛ | .04¼ |
| 40-42 water white kerosene | .03¾ | | .04 | | .04 | .04⅛ |
| ***NORTH LOUISIANA—** | | | | | | |
| 41-43 water white kerosene | .04⅜ | .05 | .05 | .05¼ | .05 | .05¼ |
| ***ARKANSAS—** | | | | | | |
| 41-43 water white kerosene | .05 | .05⅛ | .05 | .05⅛ | .05 | .05⅛ |
| **PENNSYLVANIA—** | | | | | | |
| 43 Kerosene prime white | .05¼ | | .05¼ | .05½ | .05¼ | |
| 45 Kerosene water white | .05½ | | .05½ | .05¾ | .05½ | |
| 46 Kerosene water white | .05½ | | .05¾ | .06 | .05¾ | .06 |
| 47 Kerosene water white | .06 | .06¼ | .06 | .06¼ | .06¼ | .06½ |
| 300 Mineral Seal | .06¾ | | .06½ | .06¾ | .07 | |
| **CALIFORNIA—** | | | | | | |
| 38-40 water white Kero. (high burning test) | .04 | .04½ | .04 | .04½ | .04 | .04½ |
| Engine distillate, 43-44, 445 endpoint | .06 | .06½ | .06 | .06½ | .06 | .06½ |
| Engine distillate, 42-44, 480 endpoint | .05 | .05½ | .05 | .05½ | .05 | .05½ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 41-43 water white kerosene | .04 | .04¼ | .04¼ | .04½ | .04⅜ | .04½ |
| 42-44 water white kerosene | .04¼ | .04¾ | .04½ | .05 | .04½ | .05 |
| **GULF COAST (Export)—** | | | | | | |
| 41-43 prime white | .06 | | .06 | | .06 | |
| 41-43 water white | .07 | | .07 | | .07 | |

*Louisiana, Arkansas, Mississippi and East Texas delivery.

## FUEL OIL

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Below 18 Fuel Oil, per bbl. | .52½ | .57½ | .52½ | .60 | .55 | .60 |
| 18-22 Fuel Oil, per bbl. | .55 | .60 | .55 | .60 | .57½ | .62½ |
| 20-22 Fuel Oil, per bbl. | .60 | .65 | .60 | .65 | .62½ | .67½ |
| 22-26 Fuel Oil, per bbl. | .65 | .70 | .65 | .70 | .65 | .70 |
| 24-26 Fuel Oil, per bbl. | .70 | .80 | .70 | .80 | .70 | .80 |
| 26-30 Fuel Oil, per bbl. | .80 | .85 | .80 | .85 | .80 | .85 |
| 28-30 Fuel Oil, per bbl. | .85 | .90 | .85 | .95 | .85 | .95 |
| 32-36 Gas Oil (industrial) | .02⅛ | .02⅜ | .02¼ | .02⅜ | .02¼ | .02½ |
| 32-36 Gas Oil (straw color) | .02¼ | .02½ | .02⅜ | .02⅝ | .02⅜ | .02⅝ |
| 36-38 Distillate | .02¾ | .03 | .02¾ | .03 | .02¾ | .03 |
| 38-40 Straw Distillate | .03 | .03⅛ | .03 | .03⅛ | .03 | .03⅛ |
| **NORTH TEXAS—** | | | | | | |
| Below 20 Fuel Oil, per bbl. | .50 | .55 | .50 | .55 | .50 | .55 |
| 24-26 Fuel Oil, per bbl. | .65 | .70 | .65 | .70 | .67½ | .75 |
| 32-36 Gas Oil (industrial) | .02⅛ | .02⅜ | .02⅛ | .02⅜ | .02¼ | .02⅜ |
| 38-40 Straw Distillate | .02¾ | .03 | .02¾ | .03 | .02¾ | .03 |
| ***NORTH LOUISIANA—** | | | | | | |
| 18-20 Fuel Oil, per bbl. | .80 | .90 | .80 | .90 | .80 | .90 |
| 30-32 Gas Oil | .02¾ | .03 | .02¾ | .03 | .02⅝ | .02¾ |
| ***ARKANSAS—** | | | | | | |
| 33-36 Distillate | .02⅞ | .03⅛ | .02⅞ | .03⅛ | .02¾ | .03 |
| 30-32 Gas Oil | .02¾ | .02⅞ | .02¾ | .02⅞ | .02¾ | |
| 16-22 Refinery Fuel Oil, per bbl. | .80 | .90 | .80 | .90 | .80 | .90 |
| **GULF COAST (South Texas)—** | | | | | | |
| Gas Oil | .03¾ | .04 | .03¾ | .04 | .04 | |
| Bunker C Fuel (cargo lots), per bbl. | .75 | .80 | .75 | .80 | .80 | .85 |
| Bunker C Fuel (small lots) | 1.05 | 1.10 | 1.05 | 1.10 | 1.05 | 1.10 |
| **PENNSYLVANIA—** | | | | | | |
| 30-34 Fuel Oil | .03⅞ | | .04⅛ | | .04 | |
| 36-40 Fuel Oil | .04 | | .04¼ | | .04¼ | |
| **CALIFORNIA—** | | | | | | |
| 33-36 Distillate | .02½ | .03 | .02½ | .03 | .02½ | .03 |
| 26-32 Distillate | .01¾ | .02 | .01¾ | .02 | .01¾ | .02 |
| 15-20 Fuel Oil, Bunker (at tidewater) | .60 | .65 | .60 | .65 | .60 | .65 |
| 15-20 Fuel Oil (cargo lots), per bbl. | .55 | .65 | .55 | .65 | .55 | .65 |
| 27 plus Diesel, per bbl. | .80 | .90 | .80 | .90 | .80 | .90 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 22-26 Fuel Oil, per bbl. | .67½ | .72½ | .70 | .75 | .70 | .75 |
| 18-22 Fuel Oil, per bbl. | .57½ | .62½ | .57½ | .62½ | .57½ | .62½ |
| 28-30 Fuel Oil, per bbl. (zero) | .90 | .95 | .90 | .95 | .90 | .92½ |
| 32-36 Gas Oil (zero) | .02⅝ | .02¾ | .02½ | .02¾ | .02½ | .02¾ |
| 32-36 Gas Oil (industrial) | .02⅞ | .02½ | .02⅝ | .02½ | .02¾ | .02½ |
| 36-38 Distillate | .02½ | .02¾ | .02½ | .02¾ | .02½ | .02¾ |
| 38-40 Straw Distillate | .02¾ | .03 | .02¾ | .03 | .02¾ | .03 |

*Louisiana, Arkansas, Mississippi and East Texas delivery.

## LUBRICATING OIL AND WAX

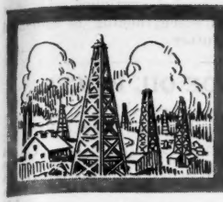
| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 100 vis., 2 color, 20-25 cold test | .06 | .07 | .06 | .07 | .06 | .07 |
| 100 vis., 3 color, 20-25 cold test | .05½ | .06 | .05½ | .06 | .05½ | .06 |
| 150 vis., 3 color, 20-25 cold test | .08½ | .09 | .08½ | .09 | .08½ | .09 |
| 150 vis., 4 color, 20-25 cold test | .08 | .08½ | .08 | .08½ | .08 | .08½ |
| 180 vis., 3 color, 23-28 cold test | .10 | .10½ | .10 | .10½ | .10 | .10½ |
| 180 vis., 4 color, 23-28 cold test | .09½ | .10 | .09½ | .10 | .09½ | .10 |
| 180 vis., 5 color, 23-28 cold test | .09 | .09½ | .09 | .09½ | .09 | .09½ |
| 200 vis., 3 color, 23-28 cold test | .11½ | .12 | .11½ | .12 | .11½ | .12 |
| 200 vis., 4 color, 23-28 cold test | .11 | .11½ | .11 | .11½ | .11 | .11½ |
| 200 vis., 5 color, 23-28 cold test | .10½ | .11 | .10½ | .11 | .10½ | .11 |
| 240 vis., 3 color, 25-30 cold test | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| 240 vis., 4 color, 25-30 cold test | .14 | .14½ | .14 | .14½ | .14 | .14½ |
| 240 vis., 5 color, 25-30 cold test | .13½ | .14 | .13½ | .14 | .13½ | .14 |
| 280 vis., 3 color, 25-30 cold test | .17½ | .18 | .17½ | .18 | .17½ | .18 |
| 280 vis., 4 color, 25-30 cold test | .16½ | .17 | .16½ | .17 | .16½ | .17 |
| 280 vis., 5 color, 25-30 cold test | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| Cylinder Stocks: | | | | | | |
| 600, steam refined, light green | .09 | .11 | .09 | .11 | .09 | .11 |
| 600, steam refined, dark green | .08 | .10 | .08 | .10 | .08 | .10 |
| 190-200 vis., D color, Bright Stock | .41 | .42 | .41 | .42 | .41 | .42 |
| 150-160 vis., D color, Bright Stock | .37 | | .37 | | .37 | |
| *150-160 vis., D color, Bright Stock | .35 | .36½ | .35 | .36½ | .35 | .36½ |
| 150-160 vis., E color, Bright Stock | .32 | .35 | .32 | .35 | .32 | .35 |
| Waxes: | | | | | | |
| 124-126 White Crude Scale Wax | .02⅛ | .02⅜ | .02⅛ | .02⅜ | .02⅛ | .02⅜ |

*High cold test. All bright stock prices are for domestic movement.

| | | | | | | |
|---|---|---|---|---|---|---|
| **PENNSYLVANIA—** | | | | | | |
| 34 Neutral | .07 | .07¼ | .07 | .07¼ | .06¾ | .07 |
| 34 Sundebloom | .07¾ | | .07¾ | | .07¾ | |
| 36 Miners' Neutral | .07½ | | .07½ | | .07½ | |
| 150, 3 color | .15 | .16 | .15½ | .16½ | .15½ | .16½ |
| 180, 3 color | .20½ | .21 | .21 | .22 | .21 | .22 |
| 200, 3 color | .25 | .26 | .25 | .26 | .25 | .26 |
| 220, 3 color | .28 | | .29 | .30 | .27 | .28 |
| 600, steam refined | .21½ | .22½ | .22½ | .23 | .23 | .23½ |
| 635, steam refined | .26 | .29½ | .29 | .29½ | .26 | .27 |
| 650, steam refined | .29 | | .29½ | .30 | .29½ | .30 |
| 600, Pennsylvania Flash | .30 | .31 | .31 | .32 | .31 | .32 |
| 630, Pennsylvania Flash | .35 | | .35 | .36 | .35 | .36 |
| 600, E filtered | .27½ | .29 | .28½ | .30 | .28½ | .30 |
| 600, D filtered | .33½ | .34 | .35 | .35½ | .34½ | .35 |
| Pennsylvania Bright Stocks | .39 | .40 | .39 | .40 | .39 | .40 |
| *122-124 White Crude Scale Wax | .02½ | | .02½ | .02⅝ | .02⅝ | .02¾ |
| 124-126 White Crude Scale Wax | .02⅝ | | .02⅝ | .02¾ | .02¾ | |

*At New York.

| | | | | | | |
|---|---|---|---|---|---|---|
| **GULF COAST (South Texas)—** | | | | | | |
| 100 vis., 2-2½ color, pale oil | .06½ | .06¾ | .06½ | .06¾ | .06½ | .06¾ |
| 200 vis., 3 color, pale oil | .09½ | | .09½ | | .09½ | |
| 300 vis., 3 color, pale oil | .10¾ | | .10¾ | | .10¾ | |
| 500 vis., 3½ color, pale oil | .12 | .12¾ | .12 | .12¾ | .12 | .12¾ |
| 750 vis., 3½ color, pale oil | .13½ | | .13½ | | .13½ | |
| 1,200 vis., 3½ color, pale oil | .16 | | .16 | | .16 | |
| 2,000 vis., 4 color, pale oil | .17 | | .17 | | .17 | |
| 200 vis., 5-6 color, red oil | .08¾ | .09 | .08¾ | .09 | .08¾ | .09 |
| 300 vis., 5-6 color, red oil | .10 | .10¼ | .10 | .10¼ | .10 | .10¼ |



# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 500 vis., 5-6 color, red oil | .11¼ | | .11¼ | | .11¼ | |
| 750 vis., 5-6 color, red oil | .12¾ | .13 | .12¾ | .13 | .12¾ | .13 |
| 1,200 vis., 5-6 color, red oil | .15 | | .15 | | .15 | |
| 2,000 vis., 6 plus color, red oil | .17 | | .17 | | .17 | |
| 200 vis., 2½ color, filtered oil | .11 | .12 | .11 | .12 | .11 | .12 |
| 300 vis., 2½ color, filtered oil | .12 | .13 | .12 | .13 | .12 | .13 |
| 500 vis., 2½ color, filtered oil | .14½ | .15 | .14½ | .15 | .14½ | .15 |
| 750 vis., 2½-3 color, filtered oil | .17 | .19 | .17 | .19 | .17 | .19 |
| **CALIFORNIA—** | | | | | | |
| 130 vis., 2½-3 color | .10¼ | .10½ | .10¼ | .10½ | .10¼ | .10½ |
| 200 vis., 2½-3 color | .11½ | .11¾ | .11½ | .11¾ | .11½ | .11¾ |
| 300 vis., 3-3½ color | .13 | .13½ | .13 | .13½ | .13 | .13½ |
| 350 vis., 3½-4 color | .13½ | .13¾ | .13½ | .13¾ | .13½ | .13¾ |
| 400 vis., 3½-4 color | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| Red Neutral: | | | | | | |
| 200 vis., 4½-5 color | .11 | .11¼ | .11 | .11¼ | .11 | .11¼ |
| 300 vis., 5-6 color | .12 | .12¼ | .12 | .12¼ | .12 | .12¼ |
| 400 vis., 5-6 color | .13¼ | .14 | .13¼ | .14 | .13¼ | .14 |
| 500 vis., 4½-5 color | .15¼ | .15½ | .15¼ | .15½ | .15¼ | .15½ |
| 500 vis., 5-6½ color | .15 | .15¼ | .15 | .15¼ | .15 | .15¼ |
| 600 vis., 6½ plus color | .16 | .16¼ | .16 | .16¼ | .16 | .16¼ |

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

## NEW YORK (BAYONNE) REFINERY PRICES

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| Gasoline, U. S. Motor, 58-60, 437 e.p. | .09 | .10 | .09 | .10 | .08½ | .09¾ |
| Kerosene, water white, 41-43 | .07¼ | .07¾ | .07¼ | .07¾ | .07¼ | .07¾ |
| *Fuel Oil, Bunker "C," 14-16, per bbl. | 1.15 | | 1.15 | | 1.15 | |
| Fuel Oil, Diesel, 28-30, per bbl. | 2.00 | | 2.00 | | 2.00 | |
| Gas Oil, 32-36 gravity | .04¾ | .05¼ | .04¾ | .05¼ | .04¾ | .05¼ |
| 25 pale Paraffin Oil, tank car | .10½ | | .10½ | | .10½ | |
| 28 pale Paraffin Oil, tank car | .07¼ | | .07¼ | | .07¼ | |
| 285 red Paraffin Oil, tank car | .12½ | | .12½ | | .12½ | |
| 250 red Paraffin Oil, tank car | .11½ | | .11½ | | .11½ | |
| 225 red Paraffin Oil, tank car | .10 | | .10 | | .10 | |
| 200 red Paraffin Oil, tank car | .09¼ | | .09¼ | | .09¼ | |
| Refined Wax: | | | | | | |
| 120-122 a.m.p., per lb. | .03½ | | .03½ | | .03½ | |
| 125-127 a.m.p., per lb. | .03¾ | | .03¾ | | .03¾ | |
| 130-132 a.m.p., per lb. | .04⅜ | | .04⅜ | | .04⅜ | |
| 133-135 a.m.p., per lb. | .04¾ | | .05¼ | | .05¼ | |
| 135-137 a.m.p., per lb. | .05½ | | .05½ | | .05½ | |
| Petrolatum in barrels, in carload lots, per pound: | | | | | | |
| Dark Green | .01⅞ | | .01⅞ | | .01⅞ | |
| Amber | .03⅜ | | .03⅜ | | .03⅜ | |
| Extra Amber | .03½ | | .03½ | | .03½ | |
| Cream | .06⅜ | | .06⅜ | | .06⅜ | |
| Lily White | .06½ | | .06½ | | .06½ | |
| Snow White | .08⅜ | | .08⅜ | | .08⅜ | |

*Lighterage 5.0 cents a barrel extra.

## NEW YORK (BAYONNE) EXPORT PRICES

| | May 20 | May 13 | May 6 |
|---|---|---|---|
| Kerosene, prime white | .07¾ | .07¾ | .07¾ |
| Kerosene, water white | .09 | .09 | .09 |
| 600, steam refined cylinder stocks, in bbls. | .30½ | .31½ | .31½ |
| 635, steam refined | .32½ | .33½ | .33½ |
| 650, steam refined | .36½ | .37½ | .37½ |
| 600, Pennsylvania Flash | .39 | .39 | .39 |
| 630, Pennsylvania Flash | .42 | .42 | .42 |
| 600, Warren E | .38 | .38½ | .38½ |
| 600, Oil City E | .37 | .37½ | .37½ |
| Light 140-150 Bright Stocks | .48 | .48 | .48 |
| Dark 140-150 Bright Stocks | .46 | .46 | .46 |

## LOS ANGELES EXPORT PRICES

| | May 20 | | May 13 | | May 6 | |
|---|---|---|---|---|---|---|
| Kerosene, water white | .03¾ | .04¼ | .03¾ | .04¼ | .03¾ | .04¼ |
| *U. S. Motor Gasoline, 53-55, 437 e.p. | .06½ | .06¾ | .06½ | .06¾ | .06½ | .06¾ |

*Prices on coastwise shipments.

## CRUDE OIL PRICES

**OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS**

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.40 on April 10.
Corsicana heavy (April 10, 1930).....$ .80
Other fields .....See gravity table

*Posted by Magnolia Petroleum Co.

**TEXAS PANHANDLE**

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

In Noel-McConnell district Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

**WEST TEXAS**

Iatan* .....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler Mitchell and Ector .....
.....See gravity table, Column 3
Howard and Glasscock .....
.....See gravity table, Column 9
Chalk† (April 10, 1930) .....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

**ARKANSAS-NORTH LOUISIANA**

Smackover, below 24 gravity (April 11, 1930 .....$ .90
Smackover, 24 gravity and above (April 11, 1930) .....1.05
Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930)... .85
Bellevue (April 11, 1930) .....1.15
Urania (April 11, 1930) ..... .95
East El Dorado (April 11, 1930) ..... .90
Other fields .....See gravity table

Cotton Valley crude about 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

**GULF COAST**

Grade A (April 10, 1930)* .....$1.10
Grade B, 25 degrees and upward .....
.....See gravity table
Jennings, La. (April 10, 1930)† ..... 1.10
Refugio (light) .....Same as Grade B
Refugio (heavy) (April 10, 1930)‖ ... .85
Sorrento (April 10, 1930)‡ ..... 1.10
Markham (April 10, 1930)§ ..... .85
High Island (April 10, 1930)¶ ..... .95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Pipe Line Co. ¶Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

**ROCKY MOUNTAIN STATES**

**Ohio Oil Co.-Midwest Refining Co.**
(Effective April 11, 1930)
Iles (Feb. 15, 1930):
33 gravity and above .....$ .87

(Continued on Page 174)

## CRUDE OIL GRAVITY TABLE

| Gravity— | Okla.-Kans. | N. C. Texas, No. La., Arkansas | Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell (West Texas); Lea, N. Mex. | Wheeler County (Texas Panhandle) | Gray County (Texas Panhandle) | Carson and Hutchinson (Texas Panhandle) | Salt Creek, Wyo. | Stephens, Ark. | Howard-Glasscock (West Texas) | Grade B Gulf Coast and Refugio, Texas |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Below 25 | .75 | .72 | .65 | ..... | ..... | ..... | ..... | ..... | .65 | 1.00 |
| 25 to 25.9 | .80 | .77 | .68 | ..... | ..... | ..... | ..... | ..... | .69 | 1.02 |
| 26 to 26.9 | .85 | .82 | .71 | ..... | ..... | ..... | ..... | ..... | .71 | 1.06 |
| 27 to 27.9 | .90 | .87 | .74 | ..... | ..... | ..... | ..... | .76 | .74 | 1.09 |
| 28 to 28.9 | .95 | .92 | .77 | ..... | .75½ | ..... | ..... | .81 | .76 | 1.12 |
| 29 to 29.9 | 1.00 | .97 | .80 | .75½ | .80½ | ..... | 1.00 | .86 | .78 | 1.15 |
| 30 to 30.9 | 1.05 | 1.02 | .83 | .80½ | .85½ | ..... | 1.05 | .91 | .80 | 1.18 |
| 31 to 31.9 | 1.10 | 1.07 | .86 | .85½ | .90½ | .77½ | 1.10 | .96 | .82 | 1.21 |
| 32 to 32.9 | 1.15 | 1.12 | .89 | .90½ | .95½ | .82½ | 1.15 | 1.01 | .84 | 1.24 |
| 33 to 33.9 | 1.18½ | 1.17 | .92 | .95½ | 1.00½ | .87½ | 1.18½ | ..... | .86 | 1.27 |
| 34 to 34.9 | 1.22 | 1.22 | .95 | 1.00½ | 1.05½ | .92½ | 1.22 | ..... | .88 | 1.30 |
| 35 to 35.9 | 1.25½ | 1.25½ | .98 | 1.04 | 1.09 | .96 | 1.25½ | ..... | .90 | 1.33 |
| 36 to 36.9 | 1.29 | 1.29 | 1.01 | 1.07½ | 1.12½ | .99½ | 1.29 | ..... | .92 | 1.36 |
| 37 to 37.9 | 1.32½ | 1.32½ | .. | 1.11 | 1.16 | 1.03 | 1.32½ | ..... | ..... | 1.39 |
| 38 to 38.9 | 1.36 | 1.36 | .. | 1.14½ | 1.19½ | 1.06½ | ..... | ..... | ..... | 1.42 |
| 39 to 39.9 | 1.39½ | 1.39½ | .. | 1.18 | 1.23 | 1.10 | ..... | ..... | ..... | 1.44 |
| 40 to 40.9 | 1.42 | 1.42 | .. | 1.21½ | 1.26½ | 1.13½ | ..... | ..... | ..... | 1.46 |
| 41 to 41.9 | 1.46½ | 1.46½ | .. | 1.25 | 1.30 | 1.17 | ..... | ..... | ..... | 1.48 |
| 42 to 42.9 | 1.50 | 1.50 | .. | 1.28½ | 1.33½ | 1.20½ | ..... | ..... | ..... | 1.50 |
| 43 to 43.9 | 1.53½ | 1.53½ | .. | 1.32 | 1.37 | 1.24 | ..... | ..... | ..... | 1.52 |
| 44 and above | 1.57 | 1.57 | .. | 1.35½ | 1.40½ | 1.27½ | ..... | ..... | ..... | 1.54 |

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25 degrees and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24 degrees and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 83 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 up to and including 44 degrees and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—Humble Oil & Refining Co. posted above prices April 10, 1930, and was followed by all other companies in Texas except Magnolia which posted a different price schedule than Humble up to 33.9 degrees (see note in paragraph just above). The Texas Company posted North Louisiana and Arkansas on April 10, and Standard of Louisiana posted on April 11 followed by other companies, but Magnolia's price schedule begins with below 28 gravity at 87 cents. North Central Texas includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran, and Corsicana light; Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer, El Dorado, and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co. April 10, 1930.

Columns 4, 5 and 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 7—Mid-West Refining Co., April 11. All crude over 37 gravity $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity 65 cents with 3-cent differential upward to and including 36 and above, which was posted at $1.01.

## CALIFORNIA CRUDE OIL PRICES

**Standard Oil Co.-Union Oil Co. (Effective March 11, 1930)**

| Gravity— | Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Huntington Beach, Signal Hill, Inglewood | Whittier, La Habra, Coyote Hills | Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills | Montebello | Santa Fe Springs (May 17, 1930) | Santa Maria, Coalinga | Wheeler Ridge, Fruitvale | Orcutt, Ventura, Rincon | Ventura Avenue (Nov. 8) | Elwood Terrace | Athens, Rosecrans, Dominguez |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 14 to 14.9 | .70 | .70 | .55 | .70 | ..... | .55 | .55 | .55 | .70 | ..... | ..... |
| 15 to 15.9 | .70 | .70 | .55 | .70 | ..... | .55 | .55 | .55 | .70 | ..... | ..... |
| 16 to 16.9 | .70 | .70 | .55 | .70 | ..... | .55 | .55 | .55 | .70 | ..... | ..... |
| 17 to 17.9 | .70 | .70 | .55 | .70 | ..... | .55 | .55 | .55 | .70 | ..... | ..... |
| 18 to 18.9 | .76 | .76 | .62 | .71 | ..... | .62 | .62 | .65 | .76 | ..... | ..... |
| 19 to 19.9 | .82 | .82 | .70 | .77 | ..... | .70 | .70 | .70 | .82 | ..... | ..... |
| 20 to 20.9 | .88 | .87 | .78 | .82 | ..... | .78 | .78 | .78 | .88 | ..... | ..... |
| 21 to 21.9 | .94 | .93 | .86 | .90 | .50 | .86 | .86 | .90 | .91 | ..... | ..... |
| 22 to 22.9 | 1.00 | .98 | .94 | .97 | .50 | .94 | .94 | .95 | .94 | ..... | ..... |
| 23 to 23.9 | 1.07 | .... | 1.02 | 1.05 | .50 | 1.02 | 1.02 | 1.02 | 1.00 | ..... | ..... |
| 24 to 24.9 | 1.14 | .... | 1.09 | 1.11 | .50 | 1.07 | 1.07 | 1.10 | 1.07 | ..... | 1.14 |
| 25 to 25.9 | 1.21 | .... | 1.16 | 1.17 | .50 | 1.12 | 1.12 | 1.18 | 1.14 | ..... | 1.19 |
| 26 to 26.9 | 1.28 | .... | 1.23 | 1.23 | .50 | 1.17 | 1.17 | 1.26 | 1.21 | ..... | 1.24 |
| 27 to 27.9 | 1.35 | .... | 1.30 | 1.29 | .50 | 1.23 | 1.22 | ..... | 1.28 | ..... | 1.29 |
| 28 to 28.9 | 1.42 | .... | 1.35 | 1.35 | .56 | 1.27 | ..... | ..... | 1.35 | ..... | 1.34 |
| 29 to 29.9 | 1.46 | .... | 1.41 | 1.38 | .62 | 1.31 | ..... | ..... | 1.39 | ..... | 1.39 |
| 30 to 30.9 | 1.50 | .... | 1.47 | 1.41 | .68 | 1.35 | ..... | ..... | 1.43 | ..... | 1.45 |
| 31 to 31.9 | 1.55 | .... | 1.53 | .... | .74 | 1.39 | ..... | ..... | 1.48 | ..... | 1.51 |
| 32 to 32.9 | 1.60 | .... | 1.59 | ..... | .80 | 1.43 | ..... | ..... | 1.53 | ..... | 1.57 |
| 33 to 33.9 | 1.65 | .... | 1.65 | ..... | .85 | 1.47 | ..... | ..... | 1.59 | ..... | 1.64 |
| 34 to 34.9 | 1.70 | .... | .... | ..... | .90 | 1.51 | ..... | ..... | 1.65 | 1.32 | 1.71 |
| 35 to 35.9 | 1.75 | .... | .... | ..... | .95 | 1.55 | ..... | ..... | 1.71 | 1.39 | 1.78 |
| 36 to 36.9 | 1.80 | .... | .... | ..... | .95 | .... | ..... | ..... | ..... | 1.46 | 1.84 |
| 37 to 37.9 | 1.85 | .... | .... | ..... | .95 | .... | ..... | ..... | ..... | 1.53 | 1.90 |
| 38 to 38.9 | 1.90 | .... | .... | ..... | .95 | .... | ..... | ..... | ..... | 1.60 | 1.96 |
| 39 to 39.9 | .... | .... | .... | ..... | .95 | .... | ..... | ..... | ..... | 1.66 | 2.02 |
| 40 to 40.9 | .... | .... | .... | ..... | ..... | ..... | ..... | ..... | ..... | 1.72 | 2.08 |
| 41 to 41.9 | .... | .... | .... | ..... | ..... | ..... | ..... | ..... | ..... | 1.78 | 2.14 |
| 42 to 42.9 | .... | .... | .... | ..... | ..... | ..... | ..... | ..... | ..... | 1.84 | 2.20 |

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11, the Union Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

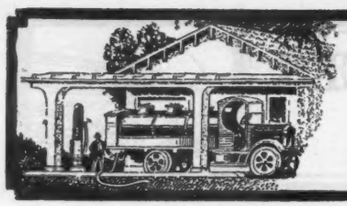
Column 2—Whittier crude, 14 to 32.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



# TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns May 20

## ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

### STANDARD OIL CO. (INDIANA)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Chicago† | 18.0 | 19.0 | 3.0 | 13.0 |
| Decatur, Ill. | 18.2 | 19.2 | 3.0 | 13.1 |
| E. St. Louis | 17.4 | 18.4 | 3.0 | 12.2 |
| Joliet | 18.4 | 19.4 | 3.0 | 13.3 |
| Peoria | 18.2 | 19.2 | 3.0 | 13.1 |
| Quincy | 18.2 | 19.2 | 3.0 | 12.9 |
| Davenport, Ia. | 18.5 | 19.5 | 3.0 | 13.3 |
| Des Moines | 18.5 | 19.5 | 3.0 | 13.3 |
| Keokuk | 18.5 | 19.5 | 3.0 | 13.3 |
| Sioux City | 18.1 | 19.1 | 3.0 | 12.9 |
| Duluth, Minn. | 19.5 | 20.5 | 3.0 | 13.9 |
| Mankato | 19.1 | 20.1 | 3.0 | 13.7 |
| Minneapolis | 19.2 | 20.2 | 3.0 | 13.9 |
| LaCrosse, Wis. | 18.2 | 19.2 | 2.0 | 14.0 |
| Milwaukee | 17.1 | 18.1 | 2.0 | 12.9 |
| Madison | 17.2 | 18.3 | 2.0 | 13.1 |
| Detroit, Mich. | 18.8 | 19.8 | 3.0 | 14.7 |
| Grand Rapids | 18.7 | 19.7 | 3.0 | 14.6 |
| Saginaw | 18.9 | 19.9 | 3.0 | 14.8 |
| Evansville, Ind. | 19.0 | 20.0 | 4.0 | 14.0 |
| Fort Wayne | 19.4 | 20.4 | 4.0 | 14.4 |
| Indianapolis | 19.2 | 20.2 | 4.0 | 14.2 |
| South Bend | 19.4 | 20.4 | 4.0 | 14.4 |
| Fargo, N. D. | 20.0 | 21.0 | 3.0 | 15.0 |
| Huron, S. D. | 20.3 | 21.3 | 4.0 | 14.7 |
| Sioux Falls | 19.1 | 20.1 | 4.0 | 14.4 |
| K. C., Mo.* | 17.0 | 18.0 | 3.0 | 11.6 |
| Springfield* | 17.8 | 18.8 | 3.0 | 12.5 |
| St. Louis* | 16.9 | 17.9 | 2.5 | 12.3 |
| St. Joseph | 17.5 | 18.5 | 2.0 | 12.2 |
| Wichita, Kans. | 16.8 | 15.8 | 3.0 | 11.8 |
| Bartlesville, Ok. | 17.5 | 20.5 | 4.0 | 11.5 |

*State tax 3 cents; remainder city tax.

†Effective February 20, discounts on Q.D.A. in Chicago district 3 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents; 100,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

### NAPHTHA

| | Tank wagon | Tank car |
|---|---|---|
| Oleum spirits | 14.7 | 12.9 |
| V. M. & P. Naphtha | 16.7 | 13.9 |
| Cleaner's naphtha | 17.0 | 14.9 |
| Stanisol | 17.0 | 15.4 |

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

### STANOLIND FURNACE OIL IN CHICAGO

| | |
|---|---|
| Less than 100 gallons | 9.0 |
| 100 to 349 gallons | 8.0 |
| 350 gallons or more | 7.5 |

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

### SOUTHWESTERN DISTRICT

**Magnolia Petroleum Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Dallas, Tex. | 16.0 | 20.0 | 4.0 | 13.0 |
| Fort Worth | 16.0 | 19.0 | 4.0 | 13.0 |
| Houston | 15.0 | 19.0 | 4.0 | 11.0 |
| San Antonio | 15.0 | 19.0 | 4.0 | 11.0 |
| El Paso | 16.0 | 20.0 | 4.0 | 13.0 |
| Texarkana | 16.0 | 16.0 | 4.0 | 13.0 |
| Muskogee* | 16.0 | 19.0 | 4.0 | 09.0 |
| Okla. City* | 16.0 | 19.0 | 4.0 | 10.0 |
| Tulsa* | 16.0 | 20.0 | 4.0 | 10.0 |
| Ft. Smith, Ark. | 14.0 | 15.0 | 5.0 | 12.0 |
| Little Rock | 18.0 | 19.0 | 5.0 | 13.0 |

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

### ROCKY MOUNTAIN DISTRICT

**Continental Oil Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Denver, Colo. | 17.0 | 20.0 | 4.0 | 15.5 |
| Pueblo | 16.0 | 21.0 | 4.0 | 15.5 |
| Grand Junction | 23.0 | 26.0 | 4.0 | 19.0 |
| Casper, Wyo. | 19.0 | 22.0 | 4.0 | 14.0 |
| Cheyenne | 20.5 | 23.5 | 4.0 | 15.5 |
| Butte, Mont. | 24.5 | 27.5 | 5.0 | 20.0 |
| Helena | 24.5 | 27.5 | 5.0 | 20.0 |
| Salt Lake, Utah | 20.0 | 23.0 | 3.5 | 17.0 |
| Albu'que, N. M. | 21.0 | 24.0 | 5.0 | 17.0 |
| Boise, Idaho | 23.5 | 26.5 | 5.0 | 19.0 |
| Twin Falls | 23.5 | 27.5 | 5.0 | 19.0 |

### PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

**The Atlantic Refining Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Pittsburgh, Pa. | 15.0 | *21.0 | ... | 13.0 |
| Philadelphia | 15.0 | *21.0 | ... | 13.0 |
| Scranton | 15.0 | *21.0 | ... | 13.0 |
| Allentown | 15.0 | *21.0 | ... | 13.0 |
| Altoona | 15.0 | *21.0 | ... | 13.0 |
| Erie | 16.0 | *19.0 | ... | 13.0 |
| Dover, Del. | 18.0 | 20.0 | 3.0 | 13.0 |
| Wilmington | 18.0 | 20.0 | 3.0 | 13.0 |
| Springf'd, Mass. | 17.5 | 19.5 | 2.0 | 12.5 |
| Worcester | 17.3 | 19.3 | 2.0 | 12.3 |
| Boston | 16.5 | 18.5 | 2.0 | 11.5 |
| Providence, R.I. | 16.7 | 18.7 | 2.0 | 11.7 |
| Hartford, Conn. | 17.5 | 19.5 | 2.0 | 12.5 |
| New Haven | 17.6 | 19.6 | 2.0 | 12.6 |

*Includes tax of 4 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

### NEW YORK AND PART OF NEW ENGLAND DISTRICT

**Standard Oil Co. (New York)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Albany, N. Y. | 17.6 | 19.6 | 2.0 | 15.6 |
| New York* | 16.3 | 18.3 | 2.0 | 14.3 |
| Buffalo | 17.8 | 19.8 | 2.0 | 14.8 |
| Rochester | 18.0 | 20.0 | 2.0 | 14.0 |
| Syracuse | 18.8 | 20.8 | 2.0 | 14.8 |
| Boston, Mass. | 16.5 | 18.5 | 2.0 | 13.5 |
| Augusta, Me. | 19.8 | 21.8 | 4.0 | 14.8 |
| Manch't'r, N. H. | 19.4 | 21.4 | 4.0 | 14.4 |
| Burlington, Vt. | 19.6 | 21.6 | 4.0 | 15.3 |

*Prices in steel barrels.

### SOUTHERN DISTRICT

**Standard Oil Co. (Kentucky)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Atlanta, Ga. | 21.0 | 23.0 | 6.0 | 15.5 |
| Augusta | 20.0 | 22.0 | 6.0 | 15.5 |
| Macon | 22.0 | 22.0 | 6.0 | 14.0 |
| Savannah | 21.0 | 23.0 | 6.0 | 14.0 |
| Birm'ham, Ala. | 21.0 | 23.0 | 5.0 | 14.5 |
| Mobile | 18.0 | 18.0 | 4.0 | 13.5 |
| Montgomery | 21.0 | 23.0 | 4.0 | 15.0 |
| Clarks'le, Miss. | 19.0 | 21.0 | 5.0 | 12.5 |
| Jackson | 20.0 | 23.0 | 5.0 | 13.0 |
| Natchez | 19.5 | 21.5 | 5.0 | 13.0 |
| Gulfport | 21.0 | 23.5 | 5.0 | 13.0 |
| Vicksburg | 19.5 | 21.5 | 5.0 | 13.0 |
| Jack'ville, Fla. | 21.0 | 23.0 | 6.0 | 14.0 |
| Miami | 22.0 | 24.0 | 6.0 | 14.0 |
| Pensacola | 19.0 | 21.0 | 6.0 | 13.5 |
| Tampa | 21.0 | 23.0 | 5.0 | 13.0 |
| Lexington, Ky. | 19.0 | 20.0 | 5.0 | 14.5 |
| Covington | 20.0 | 21.0 | 5.0 | 14.5 |
| Louisville | 20.0 | 22.0 | 5.0 | 13.0 |
| Ashland | 20.0 | 21.0 | 5.0 | 15.0 |
| Catlettsburg | 20.0 | 21.0 | 5.0 | 15.0 |

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Birmingham and Mobile state taxes add 1-cent city levy. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

### ATLANTIC COAST DISTRICT

**Standard Oil Co. (New Jersey)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Atlantic City | 16.5 | 18.5 | 2.0 | 13.5 |
| Newark, N. J. | 15.5 | 17.5 | 2.0 | 13.5 |
| Annapolis, Md. | 18.0 | 20.0 | 4.0 | 13.0 |
| Baltimore | 17.2 | 19.2 | 4.0 | 10.6 |
| Cumberland | 19.0 | 21.0 | 4.0 | 14.0 |
| Washington | 15.7 | 17.7 | 2.0 | 12.7 |
| Danville, Va. | 19.8 | 21.8 | 5.0 | 13.8 |
| Norfolk | 18.3 | 20.3 | 5.0 | 12.0 |
| Petersburg | 19.3 | 21.3 | 5.0 | 13.8 |
| Roanoke | 20.0 | 21.0 | 5.0 | 14.0 |
| Richmond | 18.7 | 20.7 | 5.0 | 12.7 |
| Charles'n, W.Va. | 18.5 | 20.5 | 4.0 | 12.5 |
| Keyser | 19.1 | 21.1 | 4.0 | 14.1 |
| Parkersburg | 17.2 | 19.2 | 4.0 | 11.2 |
| Wheeling | 18.4 | 20.4 | 4.0 | 13.4 |
| Charlotte, N. C. | 19.3 | 20.3 | 5.0 | 14.3 |
| Hickory | 20.8 | 22.8 | 5.0 | 14.8 |
| Mt. Airy | 20.5 | 22.5 | 5.0 | 14.5 |
| Salisbury | 20.7 | 20.0 | 5.0 | 14.7 |
| Charleston, S. C. | 19.3 | 21.3 | 6.0 | 12.3 |
| Columbia | 21.2 | 23.2 | 6.0 | 14.2 |

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

### PACIFIC COAST TERRITORY

**Standard Oil Co. (California)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| San Francisco | 22.0 | 23.0 | 3.0 | 15.5 |
| Los Angeles | 21.5 | 22.5 | 3.0 | 15.5 |
| Reno, Nev. | 27.0 | 28.0 | 4.0 | 19.0 |
| Portland, Ore. | 23.5 | 33.5 | 4.0 | 16.5 |
| Seattle, Wash. | 22.5 | 22.5 | 3.0 | 16.5 |
| Tacoma | 23.5 | 23.5 | 3.0 | 16.5 |
| Spokane | 26.5 | 26.5 | 3.0 | 20.5 |
| Phoenix, Ariz. | 18.0 | 22.0 | 4.0 | 20.0 |

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

### NEBRASKA

**Standard Oil Co. (Nebraska)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Omaha | 19.25 | 21.25 | 4.0 | 13.35 |
| McCook | 20.75 | 22.75 | 4.0 | 14.75 |
| Norfolk | 19.75 | 21.75 | 4.0 | 13.75 |
| N. Platte | 20.75 | 22.75 | 4.0 | 14.50 |
| Scottsbluff | 20.75 | 22.75 | 4.0 | 14.25 |

### OHIO

**Standard Oil Co. (Ohio)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| Ohio points* | 19.0 | 20.0 | 4.0 | †13.0 |

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 15 cents.

### CENTRAL SOUTH DISTRICT

**Standard Oil Co. (Louisiana)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | incl'ds tax of | tank wagon |
| N. Orleans, La.* | 16.0 | 16.0 | 5.0 | 12.0 |
| Baton Rouge | 16.0 | 17.0 | 4.0 | 14.0 |
| Alexandria | 17.0 | 17.0 | 4.0 | 14.0 |
| Lafayette* | 18.0 | 20.0 | 5.0 | 14.0 |
| Lake Charles* | 16.0 | 16.0 | 5.0 | 14.0 |
| Shreveport | 14.0 | 18.0 | 4.0 | 14.0 |
| Knoxv'le, Tenn. | 20.0 | 22.0 | 5.0 | 16.0 |
| Memphis | 18.0 | 20.0 | 5.0 | 12.5 |
| Chattanooga | 20.0 | 22.0 | 5.0 | 16.0 |
| Nashville | 19.0 | 21.0 | 5.0 | 16.0 |
| Bristol | 20.0 | 22.0 | 5.0 | 14.0 |
| Lt Rock, Ark. | 18.0 | 19.0 | 5.0 | 13.0 |

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

### TANK WAGON CHANGES

Standard Oil Co. of Kentucky advanced the gasoline tank wagon price 2 cents in Macon, Ga., May 15 to 22 cents. On the same date the tank wagon and station prices were advanced 2 cents in Savannah, Ga., to 21 and 23 cents.

Magnolia Petroleum Co. reduced kerosene 1 cent in Muskogee, Okla., May 8 to 9 cents.

## GULF COAST MARKET UNCHANGED IN WEEK

HOUSTON, Tex., May 20.—No changes of importance were indicated in the Gulf Coast refinery market the past week. Fuel oils, which eased up slightly the preceding week after a period of extreme tightness, showed no additional freeness and continued firm. Like the situation which developed the preceding week, fuel oil continued available but not in quantities which might foretell any radical weakness.

Pale and red oils also were unchanged. A generally steady tone prevailed as has been the case for several weeks. Movement of nearly all grades was in sufficient volume to indicate a settled situation but the market continued such that no additional strengthening is indicated in the near future.

## CRUDE OIL PRICES

(Continued from Page 173)

| | |
|---|---|
| Under 33 gravity | .45 |
| Dutton Creek (Feb. 15, 1930) | 1.25 |
| Rock Creek, Wyo. | 1.35 |
| Salt Creek | See gravity table |
| Big Muddy | 1.38 |
| Grass Creek, heavy (July 27, 1928) | .90 |
| Grass Creek, light | 1.55 |
| Mule Creek (May 21, 1929) | 1.20 |
| Elk Basin | 1.55 |
| Lance Creek | 1.63 |
| Poison Spider (March 14, 1927) | 1.00 |
| Notches (March 14, 1927) | .65 |
| Rex Lake (February 22) | 1.10 |
| Osage | 1.62 |
| Lost Soldier (contract, May 22) | 1.05 |
| Hamilton Dome (March 14, 1927) | .85 |
| Greybull (Feb. 15, 1930) | 1.45 |
| Four Bear (May 21, 1929) | .85 |
| Cat Creek | 1.55 |
| Pondera (Montana) (Feb. 15, 1930) | 1.80 |
| Sunburst (Montana) (Feb. 15, 1930) | 1.65 |
| Torchlight (May 21, 1929) | 1.65 |
| Hogback (Feb. 15, 1930) | 1.40 |
| Artesia (New Mexico) | 1.05 |
| Lea County | See gravity table |

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

### SOUTH CENTRAL AND SOUTHWEST TEXAS

| | |
|---|---|
| Darst Creek (April 10, 1930)* | $1.15 |
| Luling (April 10, 1930) | .85 |
| Mirando (April 10, 1930)† | .85 |
| Pettus (April 10, 1930)‡ | 1.40 |
| Salt Flat (April 10, 1930)§ | 1.15 |
| Thrall‡ | |
| Lytton Springs (Lockhart) See gravity table | |
| Somerset (April 10, 1930): | |
| Below 33 gravity | $1.16 |
| 33 to 33.9 gravity | 1.17 |
| 34 to 34.9 gravity | 1.19 |
| 35 to 35.9 gravity | 1.21 |
| 36 to 36.9 gravity | 1.23 |
| 37 to 37.9 gravity | 1.25 |
| 38 gravity and above | 1.27 |

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

### EASTERN STATES

**Joseph Seep Purchasing Agency**

(Effective May 16, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

| | |
|---|---|
| Penna Grade Oil in National Transit Lines (Pennsylvania) | 2.30 |
| Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania) | 2.25 |
| Penna Grade Oil in Eureka Pipe Line Lines (West Virgin'a) | 2.15 |
| Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) | 1.95 |
| Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 23,1929) | 1.75 |
| Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (Feb. 17, 1930) | 1.75 |
| Somerset Oil in Eureka Pipe Line Lines (Kentucky) (April 11, 1930) | 1.31 |
| Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (April 11, 1930) | 1.47 |
| Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) | .60 |
| Wayne District Oil in Cumberland Pipe Lines (April 11, 1930) | 1.34 |

**Tide Water Pipe Co.**

| | |
|---|---|
| Bradford district (May 16) | $2.50 |
| Allegany district (May 16) | 2.50 |

### MIDDLE WESTERN STATES

**Ohio Oil Co.**

(Effective April 11, 1930)

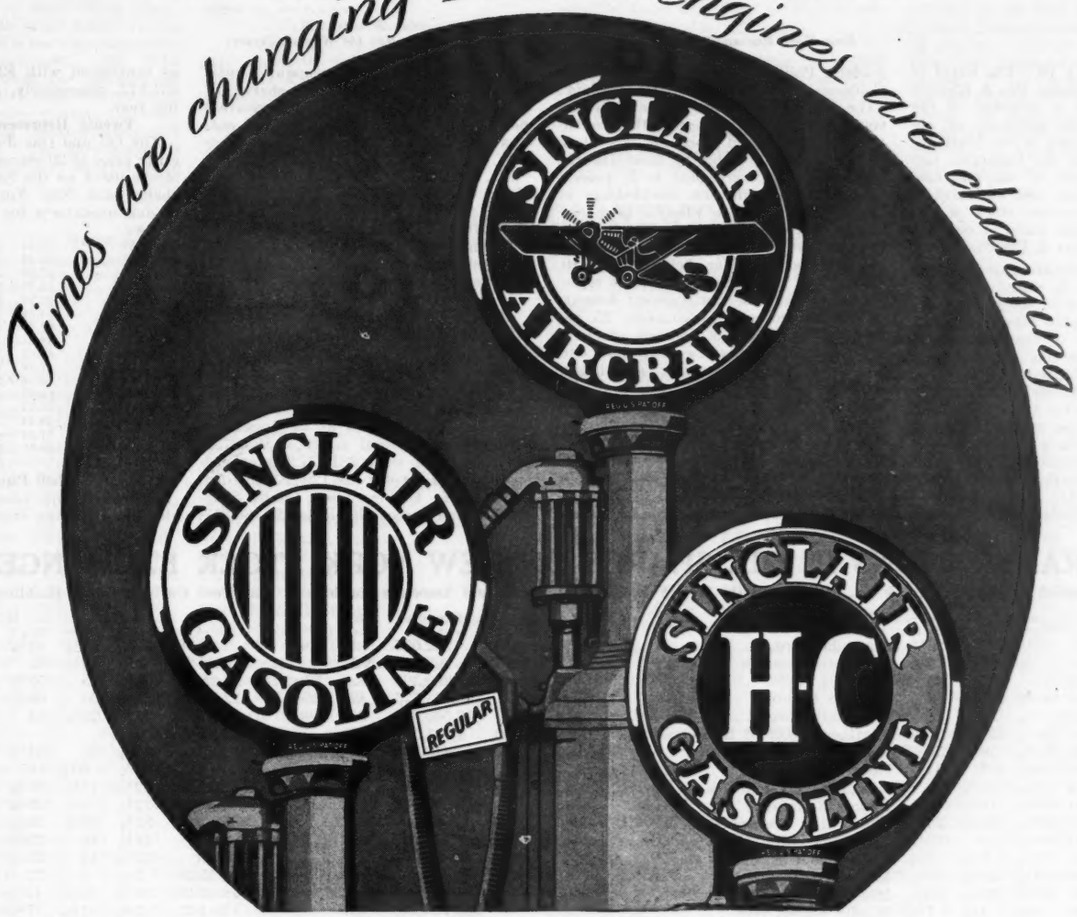
| | |
|---|---|
| Lima | $1.70 |
| Wooster | 1.80 |
| Illinois | 1.65 |
| Indiana | 1.47 |
| Princeton | 1.65 |
| lymouth | 1.23 |
| Waterloo (Nov. 17, 1926) | 1.30 |
| Western Kentucky | 1.15 |
| Dundee, Mich. (April 16)‡ | |
| | Same as Mid-Continent gravity scale |
| Upper and Lower Traverse sands, Mich. (April 16)‡ | |
| | Same as Mid-Continent gravity scale |
| Saginaw, Mich. (April 11)† | |
| | Same as Mid-Continent gravity scale |
| Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡ | 1.50 |
| Oil in line in Stoll Oil Refinery Co. in Oil City, Ky. (April 18)§ | 1.45 |
| Oil Springs (Canada) (April 11, 1930)† | 2.17 |
| Petrolia (Canada) (April 11, 1930)¶ | 2.10 |

*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment. Local refiners posted Mid-Continent prices on April 11.

### MEXICAN CRUDE

| | |
|---|---|
| Panuco* | $ .67 |

*Based on April transactions.




# Marketing methods have changed, too! *Sell*

# SINCLAIR THREE-GAS SERVICE

**There are today so many different types of engines—and so many different driving conditions in traffic and in the open—that one kind of gasoline today cannot be *exactly right* for *all* cars, and for *all* needs. It takes *three* different gasolines to meet all motoring demands, and wise motorists will buy their gas where they can *choose* from these three and get superior engine performance—give your trade these three and build increased gallonage.**

**Here's *Sinclair Aircraft Gasoline*, the *Ace* of high test gasolines, for the motorist who wants quick getaway, flashy acceleration and brilliant road performance. Sinclair Aircraft is the Ace of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.**

**Here's *Sinclair H-C Gasoline* for those who want high compression performance—*who want to stop knocks and keep them stopped*—all gasoline, nothing added!**

**And here's *Sinclair Regular Gasoline* for those who prefer to pay three cents less per gallon and yet get gas that is full of eager power. The quality gasoline at a popular price! Sell Sinclair Three-Gas Service—get the jump on competition and earn a jump in gallonage.**

**SINCLAIR REFINING COMPANY, INC., 45 Nassau Street, New York—*Atlanta, Chicago, Houston, Kansas City***

# United Corporation in Columbia Gas

## Buys 25 Per Cent of Outstanding Common Stock. Considered to Be Forerunner of Natural Gas Line to New York

By A. E. Mockler

*New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street*

NEW YORK, May 19.—The board of directors of the Columbia Gas & Electric Corp. has approved a proposal of the United Corp. for the purchase of approximately 25 per cent of the outstanding common stock of the Columbia corporation on the basis of one and one-half shares of common and one-third of a share of $3 preference stock of the United Corp. for each share of common stock of Columbia Gas & Electric.

United Corp., representing the Morgan-Bonbright interests, is expected to concentrate its activities in the natural gas fields held by Columbia Gas & Electric, and is a forerunner of the construction of a natural gas pipe line to New York, according to well-informed quarters here. Columbia Gas & Electric, in making known the United offer to its stockholders, declared that the acquisition "will facilitate the making available of our large natural gas resources to the large industrial and domestic markets along the Eastern Seaboard."

Announcing the United offer to stockholders, Phillip D. Gossler, president of Columbia Gas & Electric Corp., said: "The board of directors of the Columbia Gas & Electric Corp. approve the acquisition by the United Corp. of this block of stock and in order to facilitate the same, a deposit agreement is in process of preparation whereby stockholders of the Columbia Gas & Electric Corp. desiring to participate may deposit their Columbia stock with J. P. Morgan & Co. as depositary, on or before June 10, 1930. The committee which will represent the stockholders will accept deposits of not exceeding approximately 25 per cent of the shares of common stock of Columbia Gas & Electric Corp. now outstanding. Each depositing stockholder will receive a transferable deposit receipt of J. P. Morgan & Co. On the consummation of the necessary steps each depositing stockholder will receive shortly after July 1 shares of preference and common stock of United Corp. on the basis as above set forth."

Consummation of the Columbia-United deal will give the latter company a total of approximately 3,166,263 shares of Columbia stock, which will constitute more than 36 per cent of the total outstanding shares of Columbia Gas & Electric.

Mr. Gossler has been elected a director of the United Corp.

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### Southwest Pennsylvania Pipe Lines

Southwest Pennsylvania Pipe Lines Co. declared regular quarterly dividend of $1, payable July 1 to stock of record June 16.

### Prairie Pipe Line

Prairie Pipe Line Co. declared usual extra of 50 cents and regular quarterly dividend of 75 cents, payable June 30 to stock of record May 31.

### Mid-Continent Petroleum

Statement of Mid-Continent Petroleum Corp. and subsidiaries as of December 31, 1929, shows total assets of $85,873,186, compared with $81,477,273 at end of 1928, and surplus $26,129,281, against $22,351,267. Current assets totaled $24,908,778 and current liabilities $3,186,217 as contrasted with $21,546,190 and $2,831,172, respectively, at close of preceding year.

### Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

| | | | |
|---|---|---|---|
| Sept. 21 | 57.93 | Jan. 15 | 47.13 |
| Sept. 28 | 58.63 | Jan. 22 | 47.13 |
| Oct. 5 | 57.00 | Jan. 29 | 47.46 |
| Oct. 12 | 59.75 | Feb. 5 | 48.13 |
| Oct. 19 | 58.70 | Feb. 12 | 47.49 |
| Oct. 26 | 54.59 | Feb. 19 | 46.85 |
| Oct. 31 | 42.29 | Feb. 26 | 46.71 |
| Nov. 8 | 48.31 | Mar. 5 | 46.79 |
| Nov. 15 | 47.61 | Mar. 12 | 48.39 |
| Nov. 22 | 47.76 | Mar. 19 | 51.00 |
| Nov. 29 | 48.60 | Mar. 26 | 51.55 |
| Dec. 4 | 50.60 | Apr. 2 | 53.26 |
| Dec. 11 | 50.51 | Apr. 9 | 52.04 |
| Dec. 18 | 49.24 | Apr. 16 | 53.39 |
| Dec. 24 | 47.36 | Apr. 23 | 53.70 |
| Dec. 31 | 48.86 | May 1 | 50.23 |
| Jan. 8 | 48.56 | May 8 | 51.67 |

### Shell Pipe Line

The Shell Pipe Line Corp. reports for the three months ended on March 31 a

## TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

**Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.**

| 1930 High | 1930 Low | Week ended May 14 Sales | Week ended May 14 High | Week ended May 14 Low | Week ended May 14 Close | Stocks— | | Outstanding capital | Par value | Div. rate | Last paid | 1927 High | 1927 Low | 1928 High | 1928 Low | 1929 High | 1929 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29¾ | 18 | 1,800 | 25½ | 25 | 25¼ | Amerada Corp. | (sh) | 922,075 | N.P. | 50cQ | 1-31-30 | 37⅝ | 27⅝ | 43⅞ | 27⅛ | 42⅝ | 17½ |
| 37 | 20½ | 300 | 27⅛ | 26¼ | 26¼ | American Republic Corp. | (sh) | 209,180 | N.P. | ..... | 3-20-29 | 82½ | 35⅛ | 85 | 51⅛ | 64¾ | 12½ |
| 50¼ | 32½ | 20 | 45 | 45 | 45 | Associated Oil | | $57,260,300 | $25 | 50cQ | 12-31-29 | 50¼ | 35 | 53⅜ | 37½ | 47¼ | 34½ |
| 51⅜ | 36¼ | 3,400 | 43¾ | 43⅛ | 43⅛ | Atlantic Refining | | $66,763,775 | $25 | 25cQ | 12-16-29 | 131⅜ | 104 | 66⅜ | 50 | 77⅞ | 30 |
| 34 | 20⅛ | 5,800 | 28⅜ | 28 | 28 | Barnsdall Corp. | | $56,546,600 | $25 | 50cQ | 12-7-29 | 35½ | 20¾ | 53 | 20 | 49⅛ | 20 |
| 30½ | 19½ | 17,200 | 28¼ | 27⅛ | 27¾ | Continental Oil of Delaware | (sh) | 4,741,554 | N.P. | ..... | 3-31-27 | .. | .. | .. | .. | 47⅛ | 18 |
| 71⅛ | 49⅛ | 4,900 | 60½ | 58⅝ | 58¾ | General Asphalt | (sh) | 413,333 | N.P. | 50cQ | ..... | 96¾ | 65 | 94⅞ | 68 | 94¾ | 42¼ |
| 116⅞ | 52¼ | 17,700 | 105½ | 103 | 104⅝ | Houston Oil | | $24,968,600 | $100 | ..... | ..... | 175¾ | 60⅛ | 167 | 79 | 109 | 26 |
| 32 | 20¼ | 1,500 | 26⅛ | 25¾ | 26 | Independent Oil & Gas | (sh) | 1,362,295 | N.P. | 50cQ | 1-31-30 | 32¾ | 17⅝ | 38⅜ | 21¾ | 39⅜ | 17⅜ |
| 28⅜ | 16 | 7,500 | 20½ | 19¾ | 19¾ | Indian Refining | | $12,565,070 | $10 | ..... | 5-31-24 | 12⅛ | 7⅝ | 39⅝ | 9 | 53 | 13⅛ |
| 26½ | 21¼ | 700 | 26½ | 24½ | 25½ | Lago Oil & Transport | (sh) | 3,992,122 | N.P. | ..... | 5- 1-27 | 37¾ | 20½ | 39⅛ | 27⅜ | 38⅜ | 16½ |
| 12 | 8 | 800 | 10⅛ | 10 | 10⅛ | Louisiana Oil Refining | (sh) | 1,190,063 | N.P. | ..... | ..... | 18⅛ | 10 | 19¾ | 9⅜ | 18 | 7 |
| 10⅜ | 5⅛ | 100 | 8½ | 8½ | 8½ | Maracaibo Oil | (sh) | 330,000 | N.P. | ..... | ..... | 22¾ | 12 | 25½ | 12½ | 18½ | 5⅛ |
| 37 | 16⅛ | 15,200 | 29½ | 28⅝ | 28⅝ | Mexican Seaboard | (sh) | 1,244,383 | N.P. | ..... | 12-15-20 | 9¼ | 3 | 72 | 4⅝ | 69⅜ | 9¼ |
| 33 | 23½ | 3,400 | 28¾ | 28¼ | 28¾ | Mid-Continent Petroleum | (sh) | 1,857,912 | N.P. | 50cQ | 12-15-29 | 39⅜ | 25½ | 44½ | 25⅛ | 39⅞ | 22⅛ |
| 2½ | ⅞ | 1,100 | 1½ | 1½ | 1½ | Middle States, ctfs. | | $23,736,130 | $10 | ..... | 7- 1-23 | 3¾ | 1⅝ | 7⅜ | 2⅜ | 5⅛ | ⅝ |
| 64¼ | 51⅝ | 900 | 64¼ | 63 | 63¼ | Pan American P. & T. | | $50,084,700 | $50 | ..... | 10-20-27 | 65⅞ | 40⅛ | 54⅞ | 38¼ | 69 | 40½ |
| 67½ | 50½ | 12,300 | 67½ | 65¼ | 66⅜ | Pan American P. & T. "B" | | $121,110,650 | $50 | ..... | 11-15-24 | 66⅜ | 40¼ | 58⅞ | 37¾ | 69¼ | 40½ |
| | | No sales. | | | | Pan American Western B | | $400,000 | N.P. | ..... | 1-30-27 | 37⅞ | 16¾ | 28⅜ | 15½ | 18½ | 13⅝ |
| 12¾ | 4⅛ | 10,000 | 12¾ | 12 | 12 | Panhandle P. & R. | (sh) | 199,370 | N.P. | ..... | ..... | 18⅞ | 8 | 21¾ | 11½ | 15¼ | 3 |
| 80 | 47½ | 1,100 | 80 | 80 | 80 | Panhandle P. & R. pfd. | | $2,564,400 | $100 | ..... | 7- 2-23 | 83 | 54 | 108 | 70 | 76 | 47½ |
| 44¾ | 29⅛ | 12,000 | 42½ | 41½ | 42 | Phillips Petroleum | (sh) | 2,593,075 | N.P. | 50cQ | 1- 2-30 | 60¼ | 36¼ | 53⅞ | 35¼ | 47 | 24¼ |
| 2½ | 1 | 400 | 2 | 2 | 2 | Pierce Oil Corp. | | $29,622,831 | $25 | ..... | ..... | 1⅛ | ½ | 5¼ | ½ | 3⅜ | 1 |
| 7⅛ | 2¼ | 2,600 | 6½ | 5¾ | 6½ | Pierce Petroleum | (sh) | 2,500,000 | N.P. | ..... | ..... | 5½ | 2½ | 7 | 3½ | 5⅞ | ½ |
| 54 | 45 | 500 | 47¼ | 46¾ | 47¼ | Prairie Oil & Gas | | $60,848,000 | $25 | 50cQ* | 12-31-29 | 55½ | 45⅝ | 68 | 46 | 65⅝ | 40½ |
| 60 | 50¼ | 600 | 52 | 51½ | 51½ | Prairie Pipe Line | | $101,250,000 | $25 | 75cQ† | 12-31-29 | 190 | 130¾ | 280 | 172 | 65 | 45 |
| 11⅞ | 6½ | 800 | 8½ | 8½ | 8½ | Producers & Refiners | | $37,438,950 | $50 | ..... | 9-15-23 | 33⅞ | 16¾ | 29⅞ | 16 | 25⅞ | 4 |
| 40 | 31 | 200 | 35 | 35 | 35 | Producers & Refiners pfd. | | $2,845,350 | $50 | ..... | 5- 1-25 | 50 | 36⅞ | 49⅝ | 41 | 46¾ | 25½ |
| 27¼ | 21⅛ | 2,100 | 24⅜ | 24 | 24¼ | Pure Oil | | $75,959,250 | $25 | 37½cQ | 12- 2-29 | 33½ | 25 | 31⅝ | 19 | 30¾ | 20 |
| 28¼ | 20⅝ | 2,500 | 24 | 23¾ | 23¾ | Richfield Oil | | $52,410,875 | $25 | 50cQ | 11-15-29 | 28⅝ | 25⅜ | 56 | 23 | 49⅝ | 20 |
| 25¾ | 16½ | 1,300 | 22¼ | 22 | 22 | Rio Grande Oil | (sh) | 1,236,270 | N.P. | $2A | 7-25-29 | .. | .. | 37½ | 32 | 42½ | 15 |
| 56½ | 49¼ | 2,000 | 54 | 53¾ | 53¾ | Royal Dutch, N. Y. | (sh) | 611,303 | $1.873 | ..... | 9-13-29 | 54½ | 44¼ | 64 | 44⅝ | 64 | 43⅛ |
| 48⅝ | 42⅜ | 20 | 45¼ | 45¼ | 45¼ | Shell Transport & Trading Co. | | £23,985,000 | £1 | $1.45 | 7-23-29 | 48⅝ | 40½ | 47⅞ | 41⅜ | 57½ | 40⅝ |
| 25½ | 20⅛ | 3,900 | 22½ | 22⅛ | 22¼ | Shell Union Oil | (sh) | 13,066,497 | N.P. | 35cQ | 12-31-29 | 31¾ | 23⅝ | 39¼ | 23¼ | 31¾ | 19 |
| 37 | 22⅞ | 4,300 | 30⅞ | 29¾ | 29¾ | Simms Petroleum | | $8,353,620 | $10 | 40cQ | 12-14-29 | 25⅜ | 14¼ | 27¼ | 18⅛ | 40⅛ | 15 |
| 32 | 21⅝ | 14,200 | 28¾ | 28⅛ | 28⅛ | Sinclair Consolidated | (sh) | 5,500,000 | N.P. | 50cQ | 1-15-30 | 22⅜ | 15 | 46¾ | 17⅜ | 45 | 21 |
| 112¼ | 109 | 100 | 110½ | 110½ | 110½ | Sinclair Consolidated pfd. | | $16,025,250 | $100 | $2Q | 11-15-29 | 104½ | 97 | 110 | 102½ | 111 | 103 |
| 42 | 28⅞ | 1,000 | 36⅞ | 36¼ | 36½ | Skelly Oil | | $27,441,250 | $25 | 50cQ | 12-16-29 | 37⅜ | 24⅛ | 42⅝ | 25 | 40½ | 28 |
| 75 | 55½ | 7,700 | 72⅞ | 71⅝ | 72 | Standard Oil of California | (sh) | 12,594,098 | N.P. | 62½cQ | 2-15-30 | 60¾ | 50⅜ | 80 | 63 | 81⅞ | 51½ |
| 49 | 37¼ | 2,900 | 43½ | 42½ | 42½ | Standard Oil of Kansas | | $8,000,000 | $25 | 50cQ | 12-16-29 | 20⅞ | 14⅝ | 37¾ | 15 | 33¾ | 18 |
| 84⅞ | 48 | 111,500 | 81⅜ | 80 | 80½ | Standard Oil of New Jersey | | $634,999,200 | $25 | 25cQ* | 12-16-29 | 41⅜ | 35½ | 59⅜ | 37¾ | 83 | 49 |
| 40⅜ | 31¼ | 14,800 | 37½ | 36¾ | 37 | Standard Oil of New York | | $445,223,675 | $25 | 40cQ | 12-16-29 | 34½ | 29¾ | 44¼ | 28¾ | 48⅛ | 31¾ |
| 70 | 53 | 200 | 65 | 64¾ | 65 | Sun Oil | (sh) | 1,416,869 | N.P. | 25cQ | 12-16-29 | 34⅞ | 30 | 77 | 31½ | 86⅜ | 55 |
| 9¼ | 5¼ | 11,000 | 9 | 8½ | 9 | Superior Oil Corp. | (sh) | 776,979 | N.P. | ..... | 12-20-20 | .. | .. | .. | .. | 24 | 5¼ |
| 60½ | 50⅞ | 5,700 | 58¾ | 58 | 58⅜ | The Texas Corporation | | $246,204,900 | $25 | 75cQ | 1- 1-30 | 58 | 45 | 74¾ | 50 | 71⅞ | 50 |
| 14½ | 8⅞ | 1,700 | 11½ | 11 | 11⅛ | Texas Pacific Coal & Oil Co. | | $9,304,890 | $10 | 2½%A‡ | 12-31-29 | 18⅞ | 12 | 26⅝ | 12⅛ | 23⅞ | 9½ |
| 31 | 19½ | 200 | 30¾ | 28¾ | 30¾ | Tide Water Oil | (sh) | 2,191,759 | N.P. | 20cQ | 12-31-29 | 29⅛ | 19 | 41½ | 19⅝ | 40 | 14 |
| 94⅞ | 86⅛ | 900 | 94¼ | 93⅞ | 94¼ | Tide Water 5½% pfd. | | $19,947,000 | $100 | $1.25Q | 11-15-29 | 90⅛ | 85 | 100⅛ | 86 | 97½ | 85⅛ |
| 17¾ | 10¾ | 9,200 | 16⅝ | 16 | 16¼ | Tide Water Associated | (sh) | 5,560,424 | N.P. | 30cS | 2-15-30 | 19⅛ | 15¾ | 25 | 14¾ | 23½ | 10 |
| 89¾ | 78 | 1,200 | 88⅜ | 87½ | 88⅜ | Tide Water Associated pfd. | | $73,284,500 | .... | $1.50Q | 2- 2-30 | .. | .. | .. | .. | 90⅞ | 74⅛ |
| 24 | 16¼ | 5,500 | 21⅞ | 21¼ | 21½ | Transcontinental Oil | (sh) | 3,742,029 | N.P. | ..... | ..... | 10⅜ | 3¾ | 14¾ | 7¼ | 15¼ | 5⅛ |
| 50 | 41⅛ | 800 | 46¼ | 46 | 46¼ | Union Oil of California | | $104,342,375 | $25 | 50cQ | 11- 9-29 | 56½ | 39⅝ | 58 | 42⅜ | 57 | 42½ |
| 38½ | 31 | 300 | 33½ | 33½ | 33½ | Union Tank Car | (sh) | 1,254,048 | $100 | $1.25Q | 12- 2-29 | 127½ | 94 | 128⅛ | 110 | 163¾ | 121⅞ |
| 27 | 16⅝ | 8,700 | 18¾ | 18¼ | 18⅜ | Warner-Quinlan | (sh) | 632,948 | N.P. | 50cQ | 1- 2-30 | 34½ | 24½ | 44⅞ | 26 | 42⅞ | 15 |
| | | No sales. | | | | White Eagle Oil & Refining | (sh) | 505,100 | N.P. | 50cQ | 1-20-30 | 27½ | 20 | 38 | 20⅛ | 38 | 25 |
| 21 | 11½ | 200 | 18⅜ | 18 | 18⅜ | Wilcox Oil & Gas | (sh) | 428,907 | N.P. | ..... | 5-10-28 | .. | .. | .. | .. | 29¾ | 12⅞ |

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock.

**In comparing highs and lows for the several years in the three tables it will be necessary to take into consideration cases where there have been splits in the stock.**

balance of $3,671,181 before provision for income taxes, against a balance of $3,105,628 for the first three months of 1929. Revenue from the transportation of crude oil was $5,668,881, against $4,864,036 in the corresponding period of 1929.

**Southern Natural Gas**

Financing by Southern Natural Gas Corp., subsidiary of Tri-Utilities Corp., is scheduled for the near future in the form of $11,500,000 6 per cent convertible sinking fund debentures, due 1944. Southern Natural owns and operates one of the most extensive high pressure natural gas transmission systems ever constructed, comprising approximately 871 miles of pipe line. The corporation is supplying, under long term contracts with distribution companies, natural gas to various cities in the Southeast, including Atlanta and Rome, Ga.; Birmingham, Bessemer, Gadsden, Anniston and Tuscaloosa in Alabama; and Vicksburg and Columbus in Mississippi.

**Royal Dutch**

Royal Dutch Petroleum Co. declared final common dividend of 14 per cent, same as year ago.

**Paragon Refining**

Paragon Refining Co. declared the regular quarterly dividend of 75 cents on the Class A stock, payable July 1 to stock of record June 20.

**Italo Petroleum Corp.**

Italo Petroleum Corp. of America reports for quarter ended March 31, 1930, profit of $84,045 after charges, depreciation, depletion and abandonments, but before Federal taxes. Stock consists of 597,958 shares of $7 no-par preferred on which there is an accumulation of unpaid dividends, and 955,336 no-par shares of common.

**Western Exploration**

The Western Exploration Co. has declared a dividend of 2½ cents per share payable June 20, 1930, to stockholders of record June 15.

**Houston Oil**

Houston Oil Co. of Texas has called for redemption as of July 15 the entire issue of its 5½ per cent convertible notes, due July 1, 1938, at 102½.

**Shell Union Oil**

A loss of $3,155,008 is shown in the profit and loss statement of the Shell Union Oil Corp. and subsidiaries for the first three months of 1930 before providing for income taxes for the current year. This contrasts with a balance of $1,458,577 for the corresponding quarter of 1929. Gross income in the first quarter of this year was $10,073,696, including a half interest in the income of the Comar Oil Co. This compares with $13,531,021 in the first quarter of 1929.

Shell Union in the first three months of this year charged off $11,650,213 for depletion, depreciation and drilling expenses. It also appropriated $1,578,491 for the payment of accrued debenture interest. In the same period of last year it charged off $11,100,215 and $972,228, respectively, to cover these items. The total surplus available for preferred and

# INDEPENDENT OILS ON NEW YORK CURB

**Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.**

| 1930 High | 1930 Low | Week ended May 14 Sales | High | Low | Close | Stocks— | | Outstanding capital | Par value | Div. rate | Last paid | 1927 High | 1927 Low | 1928 High | 1928 Low | 1929 High | 1929 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ⅜ | 1/16 | 4,200 | 1/16 | 1/16 | 1/16 | Amer. Con. Oilfields | | $11,018,000 | $5 | ..... | ..... | 2 1/16 | .55 | 1½ | .53 | 72c | 1/16 |
| 4½ | 1½ | 19,400 | 4½ | 4¼ | 4½ | Amer. Maracaibo | (sh) | 700,000 | N.P. | ..... | ..... | 7½ | 2¾ | 9½ | 3⅛ | 8⅝ | 1⅛ |
| 1⅝ | 1 | 100 | 1 | 1 | 1 | Argo Oil | (sh) | 683,971 | $10 | ..... | ..... | 2¾ | 1 | 4½ | 2¼ | 5 | 1½ |
| 21 | 20½ | 100 | 21 | 20½ | 21 | British American (new, C.W.I.) | | $1,311,321 | N.P. | 25cQ* | 1- 2-30 | 40 | 20½ | 55 | 32¾ | 62 | 7⅞ |
| 2¾ | ¾ | 700 | 2 | 1⅞ | 1⅞ | Carib. Syndicate | | $131,250 | 25c | ..... | ..... | 28¼ | 15½ | 4½ | 3⅞ | 4⅞ | 1 |
| 44¼ | 26½ | 66,400 | 38¼ | 37½ | 38⅛ | Cities Service | (sh) | 24,290,359 | N.P. | 30cA† | 1- 2-30 | 58¾ | 40¼ | 90⅞ | 54 | 68⅛ | 20 |
| 93⅞ | 88 | 500 | 93⅝ | 93 | 93⅝ | Cities Service pfd. | (sh) | 1,500,000 | N.P. | 50cM | 1- 2-30 | 95⅜ | 87 | 103½ | 94½ | 98¾ | 84 |
| ¾ | ¼ | 500 | ½ | 1/16 | 1/16 | Columbia Syndicate | | $2,000,000 | $1 | ..... | ..... | 3⅞ | 1⅛ | 3¼ | .76 | 2 | ½ |
| 5⅞ | 3⅞ | 100 | 4 | 4 | 4 | Cons. Royalty | | $5,000,000 | $10 | 15cQ | 10-25-29 | 9¾ | 6⅜ | 8⅞ | 6¼ | 11⅛ | 2½ |
| 7½ | 5⅜ | 200 | 6½ | 6¼ | 6¼ | Creole Petroleum | (sh) | 5,977,873 | N.P. | ..... | ..... | 14⅞ | 9½ | 17½ | 9½ | 11⅜ | 5⅝ |
| 1 | ¼ | 100 | ⅝ | ⅝ | ⅝ | Crown Central | (sh) | 578,000 | N.P. | ..... | ..... | 3 | .50 | 3¼ | .76 | 2½ | ¼ |
| 12⅞ | 7¼ | 200 | 10⅞ | 10¾ | 10¾ | Darby Petroleum | (sh) | 1,019,392 | N.P. | 25cQ | 1-15-30 | 12 | 4 | 33½ | 3¼ | 26 | 6½ |
| 11 | 4½ | 300 | 8⅝ | 8⅝ | 8⅝ | Derby Oil & Refining | (sh) | 500,000 | N.P. | ..... | ..... | 2½ | 74 | 2¼ | 1 | 11 | 2 |
| 60 | 30 | 200 | 54 | 53 | 53 | Derby Oil & Refining pfd | | $48,500 | N.P. | ..... | ..... | 16¾ | 4 | 21⅛ | 7½ | 44 | 20¾ |
| 166⅞ | 131¼ | 1,500 | 155½ | 155 | 155¼ | Gulf Oil Corp. | (sh) | 4,504,921 | $25 | 37½cQ | 1- 1-30 | 118 | 86¼ | 165 | 101⅛ | 209 | 115 |
| 1¾ | ¾ | 2,300 | 1⅜ | 1¼ | 1¼ | Intercontinental Pet. | | $5,682,000 | $5 | ..... | ..... | 2½ | .80 | 3⅜ | 1 | 2⅞ | ⅜ |
| 3 | 1⅞ | 1,200 | 2⅛ | 2⅛ | 2⅛ | Kirby Petroleum | (sh) | 750,000 | N.P. | ..... | ..... | 2¼ | 1⅛ | 3 | 1¼ | 3⅝ | 1¼ |
| 4¾ | 1⅛ | 700 | 3⅛ | 2⅞ | 2⅞ | Leonard Oil & Dev. | | $50,000,000 | $25 | ..... | ..... | 10⅞ | 5⅛ | 9⅜ | 5⅛ | 6⅛ | 1 |
| 29 | 18⅝ | 600 | 27¾ | 27¾ | 27¾ | Lion Oil & Refining | (sh) | 250,000 | N.P. | 50Q | 1-31-30 | 27½ | 20 | 43⅞ | 20 | 38⅞ | 18 |
| 55⅞ | 34⅛ | 700 | 52¼ | 51¼ | 51¼ | Lone Star Gas | (sh) | 5,000,000 | N.P. | 20cQ | 12-31-29 | 59⅜ | 37 | 69⅛ | 48½ | 67⅞ | 28 |
| ½ | ¼ | 300 | ⅜ | 1/16 | 1/16 | Lone Star Gas R Ts | | ..... | ..... | ..... | ..... | .. | .. | .. | .. | .. | .. |
| 16 | 12 | 100 | 15⅛ | 15⅛ | 15⅛ | Magdalena Syndicate | (sh) | 850,000 | $1 | ..... | ..... | 2⅞ | .80 | 1⅞ | .50 | 1¼ | ¼ |
| 7½ | 2 | 100 | 3¼ | 3¼ | 3¼ | Margay Oils | | $160,000 | N.P. | 50cQ | 1-10-30 | 52 | 12 | 48½ | 32 | 38½ | 14 |
| ¾ | ½ | 100 | ½ | ½ | ½ | Mexico-Ohio Oil | | ..... | ..... | ..... | ..... | 12⅛ | 5 | 8 | 2¾ | 6⅜ | 2½ |
| 12⅛ | 8 | 600 | 10¾ | 10½ | 10½ | Mountain & Gulf | | $4,000,000 | $1 | 2cQ | 1-15-30 | 1½ | 1 | 1¾ | .76 | 1½ | ¼ |
| 3½ | 2⅜ | 1,100 | 2½ | 2⅜ | 2⅜ | Mountain Producers | | $1,682,182 | $10 | 40cQ | 1- 2-30 | 29¼ | 22¾ | 28⅞ | 19½ | 22⅞ | 7 |
| 7¼ | 3½ | 1,000 | 5 | 4½ | 4½ | New Bradford Oil | | $1,095,291 | $5 | 12½cQ | 1-15-30 | 5⅞ | 4⅝ | 5⅝ | 4¼ | 5 | 2¼ |
| 11¼ | 6⅞ | 1,000 | 9½ | 9 | 9½ | New Mex. & Arizona | | $1,000,000 | $1 | ..... | ..... | 16 | 9¼ | 11⅞ | 7¼ | 9⅜ | 2¼ |
| 2½ | 1 | 1,400 | 1⅝ | 1½ | 1⅝ | North Central Texas | (sh) | 400,000 | N.P. | 15cQ | 12- 2-29 | 12¾ | 9½ | 14¼ | 8½ | 18½ | 6⅛ |
| 4⅜ | 1⅞ | 800 | 3 | 3 | 3 | Pandem | (sh) | 489,875 | N.P. | ..... | ..... | 9⅜ | 3¼ | 6 | 2⅛ | 3½ | ½ |
| | | No sales. | | | | Pantapec Oil | (sh) | 1,506,000 | N.P. | ..... | ..... | 12⅛ | 7 | 15⅝ | 8½ | 10¼ | 1⅞ |
| 10½ | 9 | 300 | 10½ | 10 | 10 | Pennok Oil | | $150,000 | N.P. | ..... | ..... | 13½ | 5⅛ | 7¾ | 4⅞ | 7¾ | 4⅜ |
| 5⅜ | 2⅛ | 100 | 3⅝ | 3⅝ | 3⅝ | Red Bank Oil | (sh) | 250,000 | N.P. | ..... | ..... | 24⅜ | 7 | 18 | 4⅞ | 16 | 9⅝ |
| 7¾ | 3⅝ | 200 | 7¾ | 7¾ | 7¾ | Reiter-Foster | (sh) | 388,584 | N.P. | 10cQ | 12- 9-29 | 15½ | 3½ | 12⅞ | 4⅛ | 8½ | 1⅛ |
| 2½ | 1½ | 200 | 1¾ | 1¾ | 1¾ | Ryan Consolidated | (sh) | 500,000 | N.P. | ..... | ..... | 7 | 4½ | 12 | 4⅛ | 11 | 3 |
| 15¼ | 10 | 200 | 12⅞ | 12⅝ | 12⅞ | Salt Creek Consolidated | (sh) | 1,286,300 | $10 | 10cQ | 1- 2-30 | 8 | 5¼ | 7¼ | 5½ | 5⅞ | 1⅞ |
| 1 | ½ | 100 | ¾ | ¾ | ¾ | Salt Creek Producers | (sh) | 1,496,859 | $10 | 50cQ | 2- 1-30 | 35½ | 27¼ | 35 | 23⅛ | 25⅞ | 9 |
| | | No sales. | | | | Savoy Oil | | $750,000 | $5 | ..... | ..... | 7 | 1¼ | 3½ | 1 | 2½ | 1/16 |
| 97⅞ | 85⅞ | 2,100 | 91⅛ | 90⅛ | 90¾ | Transcontinental pfd. | | ..... | ..... | ..... | ..... | .. | .. | .. | .. | .. | .. |
| 4¾ | 2 | 700 | 4½ | 4½ | 4½ | Venezuelan Petroleum | (sh) | 755,090 | $5 | 5cQ | 11-15-29 | 7⅜ | 4¼ | 9⅛ | 4¾ | 6½ | 1¾ |
| 2½ | ½ | 100 | 1½ | 1½ | 1½ | Woodley Petroleum | | $500,000 | $1 | ..... | ..... | 7 | 4¾ | 8¼ | 4⅞ | 9½ | 2 |
| 4⅞ | 4 | 200 | 4¼ | 4¼ | 4¼ | Y Oil & Gas (new) | | $100,000 | N.P. | ..... | ..... | 6 | 1¾ | 8⅜ | 2⅛ | 2⅞ | ¼ |

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent

# STANDARD OIL STOCKS ON NEW YORK CURB

**Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.**

| 1930 High | 1930 Low | Week ended May 14 Sales | High | Low | Close | Stocks— | Outstanding capital | Par value | Div. rate | Last paid | 1927 High | 1927 Low | 1928 High | 1928 Low | 1929 High | 1929 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18¼ | 12¼ | 200 | 18¼ | 18¼ | 18¼ | Anglo-American Oil (vot. C.O.D.) | £4,192,635 | £1 | .36 1/16 | 11-27-29 | 21⅝ | 17⅞ | 22⅜ | 14⅞ | 17 | 11 |
| 1 | ½ | 200 | ¾ | ¾ | ¾ | Atlantic Lobos | ..... | ..... | ..... | ..... | .. | .. | .. | .. | .. | .. |
| 25 | 20 | 500 | 23 | 20 | 20 | Borne Scrymser | $1,000,000 | $25 | $1SA | 10-15-29 | 69 | 50 | 56½ | 44½ | 46½ | 25 |
| 69 | 57 | 100 | 57 | 57 | 57 | Buckeye Pipe Line | $10,000,000 | $50 | $1Q | 12-14-29 | 60 | 45 | 76 | 53 | 74¼ | 55 |
| 184⅞ | 155 | 100 | 175 | 175 | 175 | Chesebrough Mfg. | $3,000,000 | $25 | $1Q* | 12-30-29 | 126 | 76½ | 161 | 117 | 210 | 130 |
| 17¾ | 12⅛ | 100 | 17½ | 17½ | 17½ | Continental Oil | $36,057,840 | $10 | ..... | 12-15-27 | 22⅝ | 16¼ | 23 | 16 | 29 | 10 |
| 65¾ | 40½ | 250 | 57 | 55 | 57 | Cumberland Pipe Line | $1,500,000 | $50 | $1Q | 12-15-29 | 137 | 89 | 114 | 67 | 75¾ | 40 |
| 54¾ | 43 | 50 | 46 | 46 | 46 | Eureka Pipe Line | $5,000,000 | $100 | $1Q | 11- 1-29 | 68½ | 47 | 88 | 64⅛ | 70½ | 42 |
| 7 | 2½ | 900 | 6¾ | 6½ | 6¾ | Galena Signal Oil, ctfs. of dep. | $16,000,000 | $100 | ..... | ..... | 13½ | 3½ | 13 | 4¼ | 6½ | 3 |
| 119 | 78 | 1,300 | 108 | 106½ | 106½ | Humble Oil & Refining | $74,103,300 | $25 | 50cQ | 1 1-30 | 68½ | 54 | 114¾ | 59¼ | 128 | 74⅛ |
| 311 | 305 | 100 | 307 | 307 | 307 | Illinois Pipe Line | $20,000,000 | $100 | $10SA | 12-16-29 | 182 | 123¾ | 290½ | 176½ | 340½ | 260 |
| 30 | 22⅛ | 2,300 | 26⅜ | 25⅛ | 25¾ | Imperial Oil Co., Ltd. | 26,421,768 | N.P. | 12½cQ | 12- 2-29 | 64¾ | 37¾ | 104 | 56¾ | 41 | 22 |
| 41 | 37 | 500 | 37⅞ | 37⅞ | 37⅞ | Indiana Pipe Line | $3,000,000 | $10 | 50cQ‡ | 2-15-30 | 94½ | 61 | 91⅞ | 74⅜ | 41⅞ | 26 |
| 24 | 17⅞ | 400 | 21¾ | 21¾ | 21¾ | International Pet. | 14,247,088 | N.P. | 12½cQ | 12-16-29 | 29 | 28¼ | 55 | 35 | 30⅜ | 15 |
| 23¾ | 18⅜ | 200 | 19 | 19 | 19 | National Transit | $6,362,500 | $12.50 | 25cQ‡ | 12-16-29 | 24 | 13½ | 32⅜ | 19⅜ | 25⅛ | 10½ |
| 20½ | 14 | 500 | 20½ | 18½ | 20½ | New York Transit (new) | $1,000,000 | $10 | 40cQ† | 1-15-30 | 44½ | 31¼ | 75 | 38½ | 17½ | 10 |
| 54 | 37 | 100 | 37 | 37 | 37 | Northern Pipe Line‖ | $2,000,000 | $50 | $28A | 1- 2-30 | 100 | 70 | 69 | 56½ | 63 | 41 |
| 74⅞ | 66⅛ | x600 | 73¼ | 71 | 71 | Ohio Oil | $60,000,000 | $25 | 50cQ‡ | 12-14-29 | 67⅞ | 52 | 84 | 58½ | 79⅞ | 64⅛ |
| 32 | 20 | 400 | 24⅛ | 24 | 24 | Penn Mex. Fuel | $10,000,000 | $25 | 50cQ | 12-14-29 | 39 | 12 | 84 | 28 | 44½ | 20 |
| 33 | 21⅜ | 200 | 22 | 22 | 22 | Solar Refining | $4,000,000 | $25 | $1.25SA | 12-20-29 | .. | .. | .. | .. | 50 | 29 |
| 20⅞ | 13 | 100 | 20⅝ | 20⅝ | 20⅝ | Southern Pipe Line | $1,000,000 | $10 | 50cQ | ..... | 27¼ | 15½ | 19 | 15 | 22½ | 13 |
| 45⅞ | 37½ | 500 | 40⅝ | 39¼ | 39¼ | South Penn Oil (new) | $30,000,000 | $25 | 50cQ | 12-30-29 | 41½ | 35 | 71⅞ | 36¾ | 60¼ | 35⅛ |
| 64 | 50 | 50 | 51 | 51 | 51 | Southwest Pa. Pipe Lines | $1,750,000 | $50 | $1Q | 10- 1-29 | 83 | 55½ | 102 | 70 | 70 | 60 |
| 59⅞ | 49⅞ | x3,300 | 55½ | 54¾ | 55 | Standard Oil of Indiana | $348,175,069 | $25 | 62½cQ‡ | 12-16-29 | 81½ | 64⅜ | 95⅞ | 70⅞ | 63 | 45 |
| 40½ | 33¼ | 500 | 36⅛ | 36 | 36 | Standard Oil of Kentucky | $25,654,516 | $10 | 40cQ | 12-16-29 | 130 | 111½ | 179¾ | 122¼ | 46⅞ | 29 |
| 48⅞ | 44⅛ | 100 | 48 | 48 | 48 | Standard Oil of Nebraska | $4,649,225 | $25 | 62½cQ‡ | 12-20-29 | 49½ | 40 | 54⅞ | 39⅞ | 50¼ | 40 |
| 108½ | 81 | 50 | 94 | 94 | 94 | Standard Oil of Ohio | $14,000,000 | $25 | 62½cQ | 1- 2-30 | 87½ | 72 | 134 | 71 | 129 | 60 |
| 10 | 8 | 100 | 8 | 8 | 8 | Swan-Finch Co.‖ | $861,466 | $25 | ..... | 12- 2-29 | 21 | 14½ | 23½ | 16 | 18 | 10 |
| 97⅞ | 85⅞ | 2,100 | 91⅛ | 90⅛ | 90¾ | Vacuum Oil Co. | $126,180,350 | $25 | $1Q | 12-20-29 | .. | .. | 111 | 72 | 133¾ | 75 |

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. ‖Bid and ask. x Ex-dividend.

common dividends at the end of March was $32,110,633, against $38,481,955 at the same time a year ago.

**Northern Pipe Line**

Northern Pipe Line Co. declared regular semiannual dividend of $2, payable July 1 to stock of record June 13.

**American Republics**

American Republics Corp. has exchanged part of its holdings in Interstate National Gas Co. with the Rockefeller Foundation and other interests for preferred and common stock of the Galena Oil Corp., according to announcement to stockholders of the latter company. The letter does not indicate how much Galena Oil stock has been acquired by American Republics. As of December 31, 1928, the Rockefeller Foundation had holdings of 4,193 shares of preferred and 20,000 shares of common stock of the Galena Oil Co., which has since reorganized with new capital as the Galena Oil Corp. The stock exchange was on the basis of one share of Interstate Natural Gas for four shares of Galena Oil. American Republics has offered to exchange further Interstate Natural Gas stock on the same basis as accepted by the Rockefeller Foundation, subject to acceptance on or before June 25, 1930. Interstate Natural Gas Co. is jointly controlled by the Standard Oil Co. of New Jersey and the Columbian Carbon Co., and operates a 200-mile natural gas pipe line from the Monroe Field in Louisiana to New Orleans.

## PROBLEMS IN OIL ABSORPTION ANALYZED

(Continued from Page 150)

per 1,000 cubic feet of the discharge gas, due to a vapor pressure of the lean oil amounting to $h_o$ mm. of mercury at absorber temperature. P is the absorber pressure in pounds per square inch absolute.

The lean oil vapor pressure is, therefore, a convenient criterion of stripper performance and of the losses due to imperfect stripping. The vapor pressure referred to is that of a gas free sample. Care must be taken, therefore, to eliminate the effect of dissolved gases, either by applying suitable corrections or by choice of a method which is little affected by the presence of fixed gases.

It will be evident from equation (27) that it will be desirable to maintain $h_o$ as low as possible. This can be accomplished by efficient stripping and by adequate cooling of the lean oil. The effect of temperature particularly can best be illustrated by an example. Assuming that the lean oil be stripped to a vapor pressure of 5 mm. at 70° F., it would have at 90° F. a vapor pressure of about 8 mm. With an absorber pressure of 30 pounds per square inch gauge the corresponding richness of the discharge gas would be 0.078 and 0.125 gallons/1,000 cubic feet respectively. The losses due to operating such a plant with lean oil at 90° F. as compared to 70° F. would amount to 0.047 gallons/1,000 cubic feet, or with a plant handling 10,000,000 cubic feet per day to 170,000 gallons of gasoline per year. This example will serve as another illustration of the importance of adequate cooling of the lean oil.

Efficient stripping is less important in high pressure plants. The losses computed in the above example would be reduced from 170,000 gallons to 24,000 gallons per year, if the absorber pressure would be increased to 300 pounds per square inch gauge.

Summing up, it may be stated that efficient stripping of the lean oil and adequate cooling have an important effect on efficiency of extraction. The only partial remedy against inefficient stripping lies in high pressure absorption. It will, therefore, in general be more economical to use an absorption oil of relatively high boiling points which can be stripped effectively in the available steam stills, than to use a lighter oil with inadequate stripping, because an increased oil circulation will compensate for the lower absorption efficiency of the heavier oil while no remedy can be had against inefficient stripping.

**3. Selectivity of the Absorption Process**

The theoretical analysis presented permits of some definite conclusions as regards the selectivity of the absorption process. With a given number of theoretical plates, the butane factor to give any desired extraction of butane can be computed from Diagram 1, similarly the absorption factors, and, therefore, the percentage extraction of propane and pentane corresponding to the assumed extraction of butane. By repeating the process a diagram can be drawn similar to Diagram 3, which graphically illustrates the selectivity of the absorption process.

It will be noted that it would be impossible to obtain complete pentane recovery in a single plate absorber, without also extracting all the available butane and propane. On the other hand with a 16-plate absorber pentane recovery is complete, if only 35 per cent of the available butane is extracted. At the same time only 10 per cent of the available propane content of the gas will be absorbed in the rich oil.

These relations clearly illustrate another advantage of using an adequate number of plates in the absorber. The selectivity of the absorption process is thereby increased and any desirable extraction of valuable constituents can be obtained with a minimum extraction of undesirable ones, and therefore a reduced load on stills, condensers, cooling towers and rectifying equipment.

**4. Conclusions**

A mathematical analysis of the absorption process has been presented which permits an evaluation of all important variables entering the problem. The most important conclusions are:

(a) Butane Factor.—The effect of the most important variables, namely, pressure, oil rate, temperature and physical properties of absorption oil may be defined by a single term, designated as "butane factor." This factor is of such profound significance that it lends itself for a ready comparison of plants of widely different design. If this factor is known, definite conclusions may immediately be drawn as to the possible extraction of different constituents. This factor will serve, therefore, to characterize the type of plant and its size. Its general adoption by the industry would facilitate interchange of information and standardization of practices.

(b) Number of Plates.—A minimum number of 16 plates is recommended for standard absorption practice. In special instances it may be found economical to use a larger number of plates. It is shown that an adequate number of plates will in general be more important than a high plate efficiency.

With 16 plate absorbers the butane factors for efficient extraction of isobutane, butane, isopentane and pentane are approximately 2.0, 1.3, 0.5, 0.35 respectively.

(c) Temperature.—The importance of efficient cooling of the absorption oil is pointed out. The butane factor is increased about 2 per cent for every one degree decrease of the oil temperature. Also the losses due to inefficient stripping of the lean oil are reduced by lowering its temperature.

(d) Gasoline Content of Lean Oil.—A formula is presented for computing the losses due to the gasoline content of the lean oil. It is pointed out that with a fixed absorber pressure it is impossible to compensate for inadequate stripping by increasing the oil rate. This conclusion has also an important bearing on the selection of absorption oil. It should primarily have such physical properties as to insure efficient stripping with the equipment available in the plant.

(e) Selectivity of the Absorption Process.—A diagram is presented which illustrates the selectivity of the absorption process. It is shown that the selectivity is increased materially by providing an adequate number of plates. Other things equal the selectivity of the process is increased, the lower the temperature at which it is carried out. This effect is not pronounced, however, in the normal operating range.

(f) Application to Practice.—The relations presented in this paper are based purely on mathematical analysis, without reference to empirical data. Their value has been demonstrated, however, by their successful application to practice conditions encountered in over 40 gasoline plants. They have been a valuable aid in the design of plants, control of operations and evaluation of test data.

## CARRYING CAPACITIES OF FLOWING MUD FLUIDS

(Continued from Page 50)

particles, but yet enough so that the particles are in motion."

**Hindered Settling**

In a personal letter to the writer Prof. Charles E. Locke, of the Department of Mining and Metallurgy, Massachusetts Institute of Technology, states that under conditions of hindered settling, the per cent of solid cannot be much less than 30 per cent of the mixture. In 11-pound mud there is only 20 per cent of solids so that the action is considered to be free settling.

"This is the safest way because if any hindered settling is present it will mean a margin of safety since it takes only one-half to one-quarter the velocity of rising current to lift a particle under hindered settling conditions as it does to lift the same particle under free settling conditions."

A table has been prepared showing the relative size of particle that should theoretically be lifted by the current in a drilling well at the different points where the annular space around the drill stem has been assumed as of constant size.

It will be noted that these particles will vary in size from about 1⅝-inch diameter where the up-stream velocity is approximately 1,680 inches (140 feet) per minute down to one-sixteenth-inch particles in a stream with a velocity of 270 inches (22.5 feet) per minute.

**Screen Analysis**

A screen analysis of cuttings from one of the Oklahoma City wells drilling at 5,370 feet in 8¾-inch hole, is as follows:

| Size | Screen Mesh | Opening Inches | Per Cent |
|---|---|---|---|
| On | 14 | 0.0460 | 21.01 |
| On | 20 | 0.0328 | 18.31 |
| On | 28 | 0.0232 | 16.25 |
| On | 35 | 0.0164 | 7.59 |
| On | 48 | 0.0116 | 5.58 |
| On | 65 | 0.0082 | 5.68 |
| On | 100 | 0.0058 | 7.06 |
| Thru | 100 | 0.0058 | 7.52 |
| | | | 100.00 |

This screen analysis indicates that in this instance the largest particle delivered at the surface was three-sixty-fourths-inch size and 74.16 per cent is coarser than one-sixty-fourth-inch size.

The major portion of the cuttings are reduced much below the size of the particle that should be carried to the surface by the up-current velocity of the stream even if it is assumed that the hole has caved in places to approximately 20 inches diameter.

These estimates are based upon the full theoretical capacity of the slush pumps but it would be necessary to make a great deal of allowance for loss in pump efficiency to account for the small size of the particles carried to the surface.

In most rotary drilled holes there are caved portions and these charts indicate that the upward velocity decreases in the same ratio that the area of cross section is increased.

**Sorting Action**

This will set up a sorting action in the hole for if the current is carrying one size of grain in the lower portion of the hole and the stream is reduced in velocity by passing through one of these caved portions of the hole it can no longer carry this particle and it will tend to settle out of the mud-fluid allowing only the

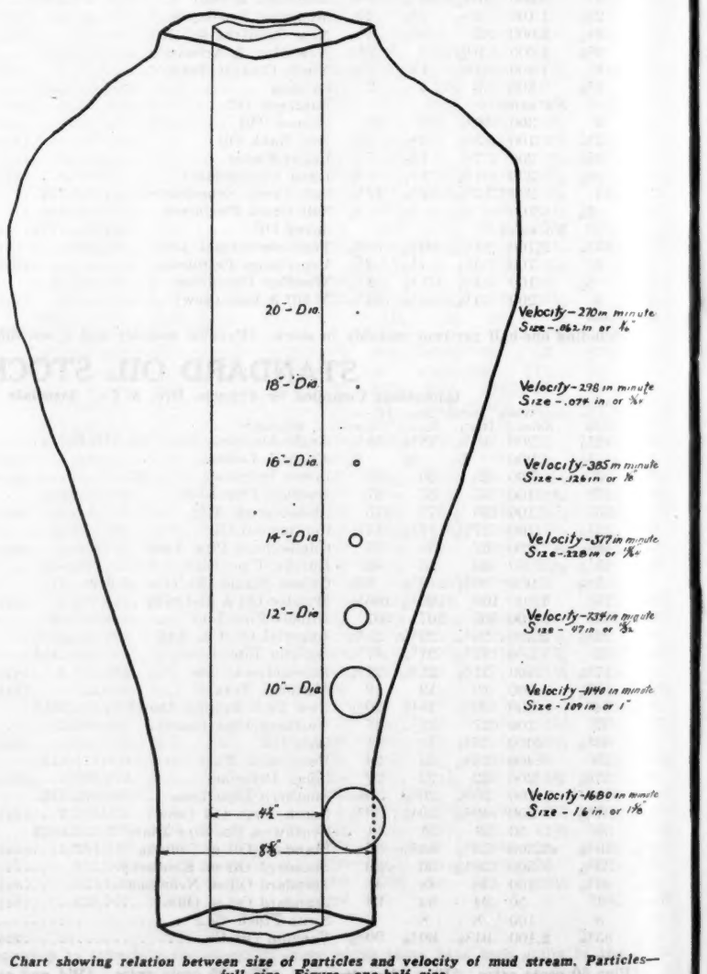
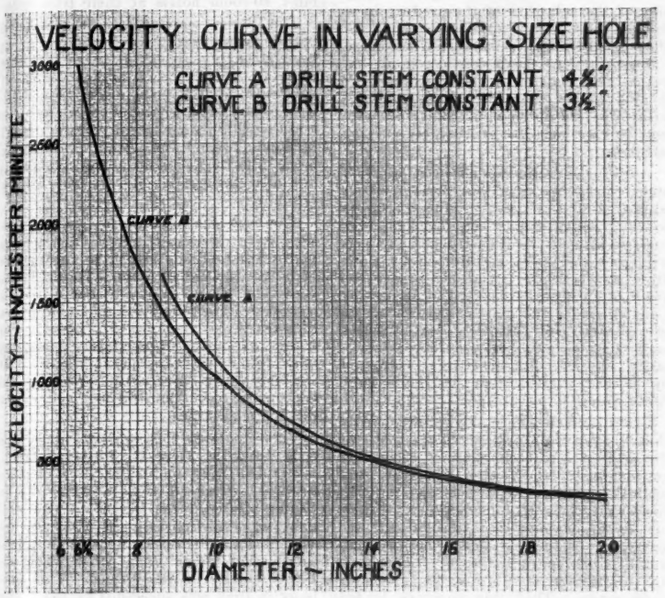



*Chart showing relation between size of particles and velocity of mud stream. Particles—full size. Figure—one-half size.*

finer pieces of cuttings to be carried higher in the hole.

This sorting action will cause large particles of cuttings to accumulate at those points where there are changes in velocity, but in time the packing of these larger grains will increase the amount of solids in the mud-fluid to over 30 per cent when hindered settling conditions will become effective, and as already stated, this increases the carrying power of the current.

There is one condition wherein this result will not be obtained and that is just prior to shutting down the slush pumps before pulling drill pipe out of the hole. Unless these pumps are continued in operation for a sufficient length of time to clear the hole of all cuttings it is reasonable to assume that these masses of larger particles will settle and either pack around the drill pipe and cause trouble in pulling out, or rest on the bottom of the hole and backfill it for some distance.




**Time Required**

To secure some idea of time required to transport a particle from the bottom of a 6,250-foot hole 6⅛ inches in diameter with 3½-inch drill stem to the surface, assuming that the annular space around the drill space is constant from bottom to top of the hole, John R. Suman's formula can be used. This is:

$$N = \frac{D\,(R^2 - r^2)}{x^2\ y\ z\ E}$$

where N equals number of minutes for fluid to make round trip
R equals radius of drilled hole
r equals radius of outside of stem
D equals depth of hole in inches
x equals radius of pump cylinder
y equals stroke of pump
z equals impulses per minute (total) (2 x number strokes on both sides)
E equals pump efficiency (80 per cent)

The time required for the round trip of the mud fluid would be about 33 minutes, or the required time for the particle to travel from the bottom to the top of the hole would be about 16.5 minutes.

With part of the hole at any larger size this time element would be increased. In a 20-inch hole with a 3½-inch stem the speed of travel of the mudstream would only be 15.6 feet per minute or at the rate of 400 minutes (6 hours and 40 minutes) for the particle to travel 6,250 feet if all the hole was this size.

**Rittinger Formula**

The Rittinger formula has been used for calculating the carrying capacity of this mud stream, which is:

$$V = C\ \sqrt{D\,(d - 1)}$$

where V is velocity, D is diameter of particle and d is specific gravity of particle and 1 represents the gravity of water. With mud fluid this gravity factor may vary from 1.08 for a 9-pound mud to 1.80 for a 15-pound mud, so the value of this part of the equation may vary from 1.57 (2.65 — 1.08) to .85 (2.65 — 1.80).

Professor Richards has secured the value of D for various size particles of quartz (specific gravity 2.65) in currents of water, "V," by experiment and they are set forth in Vol. IV of his book on "Ore Dressing."

He has found that a 1 mm (0.03937 inch) particle can be carried in an up-current of 91 mm (3.58 inches) per second and the "C" value in this case would be 846. From other data prepared by Richards for other size particles and velocities it has been found that it is probably safe to take the "C" value for this formula as 900 when used as outlined here.

With the "C" value established it is not difficult to transpose the factors of this formula and secure some idea of the size particle of sandstone or lime that can be carried in the known current velocities encountered in rotary wells. These values are shown in the table and graph included in this article.

If a cubic foot of sandstone weighs 145 pounds and the 6⅛-inch diameter hole is drilled at the rate of 30 feet per day it would mean that about 885 pounds of cuttings must be carried to the surface every 24 hours. Disregarding loss of efficiency in transporting this amount of material, 6,250 feet vertically this would represent an expenditure of about 160 horsepower over the period of 24 hours.

Compare this with the work done in the 12½-inch hole at Oklahoma City where speed of drill is as high as 200 feet per day and 23,780 pounds of material is removed every 24 hours.

**Loss of Drilling Speed**

The loss of drilling speed cannot all be accounted for by the depth of hole unless due allowance is made for the energy required to transport this material from the bottom of the deeper hole to the surface, for it is only logical to assume that a bit will drill as rapidly in the same type of formation at any depth below the surface.

Eddy currents, helical motion given to the mud fluid due to rotation of drill stem in hole and friction on the walls of the hole and on the drill stem all enter into this problem to some degree, but with all things considered it does seem that the slower drilling so common to deeper holes is largely accounted for by the slowing up of the velocity of current of mud fluid in the enlarged annular spaces in the hole.

The methods of correcting this condition and speeding up drilling might be found in cementing large caves, changing the character of the mud fluid so that it will have a higher carrying capacity even at low velocities, and perhaps adding some admixture to the drilling mud that will tend to act as a floating agent for the cuttings and buoy them up under all conditions of velocity and stop settling of larger particles in caved portions of the hole.

This problem is now under investigation by Prof. L. C. Uren of the University of California and it is brought to the attention of the production engineers with the hope that it will receive their consideration.

Acknowledgement is made to H. F. Beardmore of the Indian Territory Illuminating Oil Co.; R. L. Ginter of the Ginter Laboratory; Prof. Charles E. Locke of the Massachusetts Institute of Technology, and C. H. Keplinger of the University of Tulsa for their assistance in preparing data for this presentation of the problem and it is hoped that at a later date some practical suggestions covering means of overcoming this apparent loss of energy in transporting cuttings in rotary holes will be available for publication.

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R. H. Richards' "Ore Dressing," Vol. II, III and IV.

Bulletin, School of Mines and Metallurgy, University of Missouri, Rolla, Mo. Technical series, Vol II, November, 1927, No. 1, "The Scientific Fundamentals of Gravity Concentration" by Josef Finkey, E. M., School of Mines, Sopron, Hungary, translated into English by C. O. Anderson and M. H. Griffitts.

"The Laws of Motion of Particles in a Fluid" by R. G. Lunnon, University of Durham, Armstrong College, Newcastle-on-Tyne, England, with abstract published in Mining and Metallurgy, July, 1929.

"Petroleum Engineering in the Fox and Graham Oil and Gas Fields" by H. C. George and John R. Bunn, 1924. U. S. Bureau of Mines publication.

John R. Suman's book, "Petroleum Production Methods."

## FISHER AND ASSOCIATES ORGANIZE BART COMPANY

(Continued from Page 169)

lips Petroleum Co. and to organize the new company.

The experience gained during the 17 years which Mr. Fisher has spent in various phases of the oil industry has helped him to appreciate its problems. His first job was with The Texas Company and in its employ went from digging pipe line ditches to chief engineer of pump stations. He left The Texas Company to join the Prairie Pipe Line Co. and later the Magnolia Petroleum Co. He served in the army shortly thereafter.

After returning, he joined the Sinclair-Cudahy Pipe Line Co. The natural gasoline industry was in its infancy at that time and he saw its possibilities. He spent the next six years in the employ of the Chestnut & Smith Corp. in the operation of its numerous plants and then left to head the Bartlesville laboratory for the Phillips Petroleum Co.

Other officers in the new company include John H. Kane, chairman of the board; O. K. Wing, president; C. B. Fowler, secretary and treasurer; and Clyde Alexander and Stewart Dewar as directors.

## SEVERAL PHASES TO OPERATION OF PLANT

(Continued from Page 169)

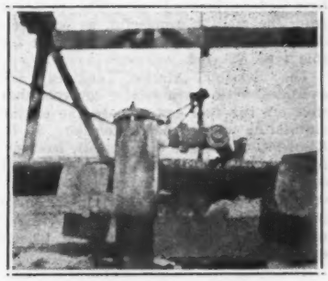
some one from getting burned and remember that the average gas leak gets larger rather than smaller once it is on fire.

"6. Use particular care when blowing lines near roads and shut them in on the approach of a car. This may save the company a damage suit for some one's car, and you the danger of being burned.

"7. If possible, always use gas for thawing lines instead of oil. You can shut the gas off and put out the fire where you cannot with oil.

"8. Always go to the drilling rigs and ask status of well before lighting any fire close by. The driller or tooldresser should be glad to tell you whether the well is making gas or not as this might save not only the rig but someone from being badly burned.

"9. When drip-cart or gasoline wagon men are loading or unloading they will always unfasten the tugs. In case of fire this will not allow the horse to run away with a load of blazing gasoline to be scattered over the field. In case your



**A Dehydrator.**

**Filled with calcium chloride the gas passes and the moisture is taken up forming a brine which is drained off.**

cart or wagon does catch fire, get the horse loose any way you can, take them at least 100 yards away and let it burn.

"10. Always see that your drip-cart or gasoline wagon has a chain dragging before starting out with it.

"11. If while bleeding lines you accidentally get your clothes saturated with gasoline, that is, other than your gloves, go in immediately and change them. In the first place, gasoline in your clothes will blister your skin, and secondly, just a little gasoline on your clothes will make a blazing torch out of you in just a minute.

"12. Never go into any building when your clothes are wet with gasoline to get warm unless it is steam heated. Take your wet clothes off at the door.

"13. In case your igniter is wet and you have to strike a match to light the torch, do not strike it close to a joint. Remember that most leaks are at the joints.

"14. When lighting heaters that have gone out, be sure that there is no gas floating around and then light heater with either your torch or a wire with a gasoline soaked rag on it. Keep your face away from the heater as they usually blow back.

"15. When thawing the bleeder on the bottom of a drip, do not get down into the hole where it is, stand back on the bank above. And when you think you have it thawed put the plug in the tee on the riser before trying it. Then in case it should catch fire you are out where you can get away.

"16. In case you find a leak on this bleeder or any part of the drip in the hole, do not get down to find what it is while alone, notify the foreman. You could very easily be gassed and not get out.

"17. Before starting any fire it will be wise to stop for an instant, and plan what you would do in case your clothing did catch fire. For instance, you are ready to light the fire, you stop for an instant and decide if you catch fire you will jump into the water, or you will rip off your clothes and cover your feet with dirt from a certain pile of loose dirt you see and that never under any circumstances will you start to run.

"It is a known fact that men when partially out of their heads or under severe mental stress will unconsciously do and say things they were thinking about just prior to becoming that way, and

practice in thinking of the right way to do when your mind is clear should give your body the benefit of the action of your subconscious mind when you are unable to think clearly.

"18. When thawing any line or bleeder close to oil or gasoline never leave the fire to go any place. Too many things might happen while you were away that would start a serious fire.

"19. And last, but really most important, if there is any doubt in your mind as to safety, call your foreman and let him approve it before starting a fire. Company property is worth a lot of money and human lives cannot be replaced with anything."

In addition to this instruction and bulletin, safety first meetings are conducted once a month where examples of accidents are portrayed and their possible avoidance suggested. Also, a thorough drill in first aid is insisted on. The response from the men is wonderful, as our accidents have been relegated to the past for this type of work.

The booster station engines are equipped with thermostatic controls that shut off the fuel gas in case the engine circulating water becomes too hot. R. R. Knowles, of the gas department, has perfected a mercury U tube with electrical connections that alarm the booster operator in case his vacuum or discharge pressures have changed from the ordinary ranges at which he is supposed to operate.

The quantity of gas handled is controlled by the temperature. In the summer time when all the lines are open and free of water, ice or condensed gasoline, the boosters are able to operate freely and deliver a full load to the gas plants, but winter weather cools the vapors so that the water must be bled out and the gasoline in the lines hauled away from the drips in the drip carts, which can be seen all over the field. There is naturally a smaller amount of gas delivered to the plants on account of these obstructions. Several years ago A. C. Andrews, of the gas department, conceived the idea of separating the water from the gas at the well by means of passing it through calcium chloride. Assisted by H. W. Young, they worked out the problem in this manner:

"A small metal pot was placed at the edge of the derrick floor. This pot contained a screen sack or basket. The calcium chloride was held in the basket and as it has a strong affinity for water, it readily absorbs the water from the gas as it passes through the pot and the liquid is caught in a drip placed farther down the line. This solution has a low freezing point and can be readily drained out. These dehydrators have been very successful and have been our mainstays for maintaining the quantity of gas handled during the winter months."

The quality of the gas handled is becoming a greater problem every year. As is natural, the supply is gradually going downward and with no pressure on the booster intake lines a larger percentage of air is brought in. This calls for a continual fight to keep every possible leak repaired. The only way this problem can be solved will be through the cooperation of the producing and gas departments. Both departments are working in perfect accord, almost as if it were a race, to see which can get its own equipment in the best possible condition so there will not be a leak from the wells to the booster stations. The thought of air leak brings out one statement, viz: Adulterated gas is very dangerous and air does not make gasoline.

## OPINIONS VARY AS TO USE OF NATURAL GASOLINE

(Continued from Page 170)

knowledge of the subject and does not hesitate to express an opinion. The second class is composed of those who may or may not be a part of the integrated company but who does not have direct contact with natural gasoline manufacture and with rather limited facilities depends to a great extent on the literature for his knowledge and therefore hesitates to express an opinion, and as the third class, the smaller independent refiner, who has few of the advantages of the other two classes and whose knowledge is limited, and, due to this fact, is quite reticent to express an opinion.

### Refiners' Position

To better understand the refiners' viewpoint, let us look at the questions from his angle and consider some of the factors that might enter in and influence his opinion as to what natural gasoline specifications should be from his particular point of view. First and possibly most important, is his raw material or crude oil. As you are well aware with a raw material as widely varying in composition as crude oil, the refiner, by direct distillation, may produce a product varying from a highly volatile gasoline to a heavy comparatively low volatile naphtha. That the equipment in which this product is distilled may vary from the so-called direct distillation to the highly fractionated product of the modern bubble tower. The refiner, to further increase his production of gasoline, employs one of the many types of cracking equipment. Here again enters a factor that varies his products, depending on whether the process used is of the comparatively low-pressure, low-temperature type or the high-pressure, high-temperature type or possibly the more recent vapor-phase type.

This final and quite important factor that enters to vary his product and thereby his opinion is his stabilization and vapor recovery equipment. This equipment will vary his product, depending on whether it includes the stabilization of crude or pressure distillate or both — whether the vapors from such stabilizers, when mixed with ordinary refinery gases or vapors, are processed through an efficient recovery plant for the production of highly volatile gasoline, and whether this highly volatile gasoline is properly stabilized.

From the summation of opinion thus far, we have considered only those factors that would influence the refiner by reason of his own particular situation and which are only a small part of his problem. Let us now consider the other factors that he must take into consideration and which exerts a great deal of influence on his opinion of what natural gasoline should be and their equivalent specifications.

### Desirable Properties

The refiner has long been aware that the most important characteristic of his motor fuel is volatility and has more recently learned that the other important characteristic, second only to volatility, is its antiknock properties. To determine the degree of volatility of his products, the refiner, of course, resorts to the distillation test. There was a time when this test told little or nothing of actual volatility of his product but partly through his own experience, partly through the efforts of his research laboratory, and, to a large extent, to information derived from highly specialized investigators, he has learned, at least to a certain degree, to interpret the results of his distillation test in terms of motor performance.

In this connection he has learned that instead of initial, the 5, 10 or even the 15 per cent point represent ease in starting; that the 10 per cent point when correlated with the vapor pressure may indicate vapor locking tendencies; that the curve up to the 35 per cent point indicates satisfactory operating during the warming-up period without excessive use of the choke; that the 50, 60 or even 65 per cent are comparatively ineffective as far as volatility is concerned but may pass certain limits and become heavy enough to result in crankcase dilution or light enough to result in loss of power when the motor is thoroughly warmed up.

Thus, if the refiner is to produce a satisfactory motor fuel, he must consider all the points on the Engler distillation curve from the 5 per cent point to the 90 per cent point, many of which are closely defined and must be varied within certain limits, depending on the atmospheric temperature and the location in which the fuel is to be used. Here, also, we must consider recovery and gravity. Recovery at the present is a part of nearly every motor fuel specification and its importance is expressed in the U. S. Motor specifications, in which it becomes the limiting factor of volatility as expressed by the 10 per cent point.

### Gravity Not Important

The refiner is fully aware of the fact that gravity so far as volatility or motor performance is concerned means nothing, yet his products are still being sold on a gravity basis and are so quoted on the market. This is particularly true in certain localities where gravity is still accepted as a criterion of quality and demanded as such. As to the antiknock characteristics of his motor fuel, the refiner realizes that this is, to a great extent, a function of the character of his raw material, of the type of cracking equipment employed and the method of the final refining of the product. Antiknock is also in a lesser degree a function of the volatility of the product in so far as those components responsible for the volatility are antiknock in character.

Now that we have considered all the points that the refiner must consider, is it any wonder that the refiner hesitates to express his opinion and that the opinions so expressed are of a widely varying nature?

As to the refiners' gasoline or base stock varies in volatility characteristics compared to the specifications set up as to what constitutes a satisfactory motor fuel, so also do his requirements for natural gasoline, to a certain extent vary. How, then, is the refiner to select the grade of gasoline best suited to his needs? Can he, under the existing specifications of gravity and recovery, intelligently make his selection, or are there certain other physical characteristics exhibited by natural gasoline that will more definitely define its utility?

From his experience the refiner knows that his natural gasoline blending up to the present has been more or less of a cut-and-try method, and when by this method he decides on a certain grade he finds that, although successive purchases of this grade may meet the present requirements of gravity and recovery, that its volatility characteristics, as expressed by the Engler distillation, vary over a wide range. That this variance is reflected to a certain degree in the finished blend and at times constitutes the difference as to whether his motor fuel does or does not meet specifications.

### Purchase Basis

By reason of these observations the refiner believes that as he must market his gasoline on volatility characteristics as expressed by the Engler distillation, that he should also purchase natural gasoline on this basis. He has been shown that volatility of natural gasoline is a function of the relative proportion of its components, that is, the individual hydrocarbons present. That these hydrocarbons for ease of consideration have been grouped as butanes and lighter, pentanes, and hexane and heavier. That specification should show a close relationship to the relative volume of these groups — that the percentage evaporated on the Engler distillation at given temperatures may be interpreted as per cent of these groups. He has further been shown that vapor pressure is closely related to vapor locking tendencies—that vapor pressure is a direct function of butanes and lighter and that for a given propane content the vapor pressure is closely related to the content of butane and lighter and that vapor pressure will perform the function now accomplished by distillation loss.

I will say to you that the average refiner is adverse to giving up the gravity and recovery as specifications, if they could be included with points on the Engler courve, but in light of the information supplied him, I am sure the refiner would heartily indorse any set of specifications so based on the per cents evaporated on the Engler curve in direct per cent (corrected for loss) that would bear a close relationship to the group composition, and the vapor pressure performing the function of distillation loss.

That by the correct interpretation of such specifications he would be capable of determining the effective volatility of each grade and select that grade best suited to his needs. In so doing natural gasoline would be of greater utility to him and in consequence be used in greater proportion, resulting in a benefit to the natural gasoline manufacturers, the refiners and to a satisfied motoring public.

## SINCLAIR EXTENDS ITS MARKETING PROPERTIES

(Continued from Page 170)

During the past year the corporation has attracted wide attention in marketing circles through the establishment of several terminals. These terminals, located in outside towns and cities, have elaborate restaurant and rest room facilities for tourists and complete gasoline, oil, grease and tire stations. At Rolla, Mo., and Columbia, Mo., the company last year built 40-room hotels at their terminals.

The Pierce company was the pioneer in petroleum marketing in Mexico, and has been strongly entrenched there for more than 50 years. It does approximately one-fourth of the total distributing business of the Mexican republic, its agencies and distributors now being located in 227 Mexican towns and cities, its emblem being known not only along the coasts but also throughout the interior of the republic.

The Pierce company and its predecessors have been engaged in distributing petroleum products since the first Drake well was drilled in Pennsylvania. The first tank wagon ever used for delivering petroleum to retailers is said to have been introduced by them in St. Louis. For many years Pierce was closely associated with Standard Oil, and at the time of the dissolution decree the Standard Oil Co. owned more than 68 per cent of the total capital stock.

The business was started under the firm name of John R. Finlay and Co. about 75 years ago. This was changed to H. C. Pierce & Co., in 1869, and to Waters-Pierce & Co. in 1877. The business was incorporated in 1878 as the Waters-Pierce Oil Co. and was continued under that name until 1913 when the Pierce Oil Corp. was formed. This company in turn was succeeded by the Pierce Petroleum Corp., the assets of which are to be taken over by the Sinclair Consolidated Oil Corp.

### Sinclair Statement

H. F. Sinclair, chairman of the Sinclair board of directors, in commenting on the announcement, said:

"The Pierce distributing facilities are peculiarly advantageous to our company. There are practically no towns in which both companies have duplicate distributing plants. Addition of the Pierce facilities to those already established by Sinclair gives our company complete coverage from the Gulf to the Lakes and the whole Middle West country. In Texas, Oklahoma, Missouri and Arkansas, we acquire immediately more than 1,500 bulk and service stations with a settled demand which will now be met with Sinclair products.

'This is one of those deals that are equally good for buyer and seller. It is advantageous to Sinclair because of the marketing facilities we acquire in territory that we are able to supply with our own products; it is advantageous to Pierce because, without production, refining capacity and distributing which would cost millions to provide—it cannot progress.

"Considering only the most important consuming centers, Sinclair now has distribution facilities in 78 of the 100 principal markets of the United States. This number will be increased to 85 by the Pierce acquisition, which means that Sinclair will have direct representation in all except 15 of the largest consuming centers of the country and will be selling gasoline actively in all of the heavy consuming states with the exception of the Pacific Coast states. All of the seven chief centers added through the Pierce acquistition are in the south central area where there is all year-round demand."

# GULF COAST PORT SHIPMENTS IN APRIL LESS THAN IN MARCH

HOUSTON, Tex., May 19.—Shipments of crude and refined products through Gulf Coast ports during April totaled only 18,464,846.63 bbls. against 20,311,328.08 bbls. during the preceding month, which represented a high mark. The decrease was due to a sharp drop in the amount of liftings for coastwise movement, chiefly Atlantic Seaboard points. There was a slight increase in export shipments of crude but this was far offset by declines in export demand for refined products and both coastwise liftings of both crude and refined products. Water shipments by companies and ports for April compared with March follow:

**REFINED PRODUCTS**

| Company, port— | Coastwise | | Export | |
|---|---|---|---|---|
| | March | April | March | April |
| Standard Oil Co. (La.), Baton Rouge | 1,308,049.00 | 429,415.00 | 475,918.00 | 593,229.00 |
| The Texas Company, Port Arthur | 985,558.00 | 1,242,741.00 | 447,564.00 | 312,917.00 |
| Gulf Refining Co., Port Arthur | 3,121,090.50 | 2,506,675.68 | 91,294.39 | 178,385.02 |
| Magnolia Petroleum Co., Beaumont | 1,488,088.21 | *1,419,702.21 | ..... | ..... |
| Humble Oil & Rfg. Co., Baytown | 1,716,716.15 | 2,320,744.89 | 2,028,560.10 | 2,042,646.15 |
| Atlantic Oil Production Co., Atreco | 254,481.37 | 68,089.21 | ..... | ..... |
| Pure Oil Co., Smiths Bluff | 519,781.44 | 424,225.92 | ..... | ..... |
| Total refined | 9,393,764.67 | 8,411,593.91 | 3,043,336.49 | 3,157,177.17 |

**CRUDE**

| Company, port— | Coastwise | | Export | |
|---|---|---|---|---|
| | March | April | March | April |
| Standard Oil Co. (La.), Baton Rouge | 236,090.00 | 423,312.00 | ..... | ..... |
| The Texas Company, Port Arthur | 152,339.00 | ..... | ..... | ..... |
| Gulf Refining Co., Port Arthur | 495,942.76 | 445,030.04 | ..... | ..... |
| Magnolia Petroleum Co., Beaumont | 1,195,791.31 | *958,581.32 | ..... | ..... |
| Humble Oil & Rfg Co., Texas City | 475,359.00 | 615,307.00 | 54,336.00 | ..... |
| Ingleside | 86,287.00 | 165,360.00 | ..... | ..... |
| Baytown | 280,171.00 | 215,776.00 | ..... | 53,794.00 |
| Harbor Island | 2,339,305.00 | 1,521,814.00 | ..... | ..... |
| Neches | 59,639.00 | ..... | ..... | ..... |
| Atlantic Oil Production Co., Atreco | 735,814.77 | 839,324.37 | ..... | ..... |
| Beaumont | 142,900.91 | 182,339.45 | ..... | ..... |
| Pure Oil Co., Smiths Bluff | 591,935.17 | 700,194.37 | ..... | ..... |
| Sun Oil Co., Sabine Pass | 1,028,316.00 | 775,243.00 | ..... | ..... |
| Total crude | 7,819,890.92 | 6,842,281.55 | 54,336.00 | 53,794.00 |
| Total shipments | 17,213,655.59 | 15,253,875.46 | 3,097,672.49 | 3,210,971.17 |

*Magnolia Petroleum Co. makes no distinction in reports between coastwise and export shipments.

## GASOLINE MEETINGS LARGELY ATTENDED

(Continued from Page 45)

Continent figure for comparison is nearly 6 cents.

R. C. Wheeler, of the California delegation was asked to explain why there should be such a wide difference. He replied that most of the California plants were comparatively large and there was a saving in overhead. In addition, the greater share of the gasoline is being produced in fields where there is a large volume of gas necessitating lesser investment in lines. He further stated that the natural gasoline produced in California contained more propane and butane than that produced in the Mid-Continent and might include up to 50 per cent of these fractions. He also pointed out that many of the plants operated on well pressure and there was a minimum of equipment required in transferring the gas from the field and through the plant.

The further discussion of costs brought the comment from F. L. Chase that paying the producer 50 per cent of the proceeds from the sale of the residue gas is working an unjust hardship on the gasoline manufacturer and that simply because that arrangement has been accepted in the past is little reason why it should not be changed.

S. S. Smith, in charge of Mid-Continent plant for the Shell Petroleum Corp., stated the small revenue to the gasoline manufacturer on the present basis might also be accounted for by the low price paid for the residue gas.

Mr. Chase answered that the same factors of supply and demand fix the price paid for residue gas as in the case of other commodities. Overproduction of gas in some areas, ruinous competition in other areas, and the hazards in the distribution business accounted for low prices at some points and this condition, when existing, was purely local.

**Comparison With California**

As the discussion then reverted to a comparison of cost of manufacture in California and in the Mid-Continent, Mr. Tobias clearly outlined three factors which he said were principal in accounting for this difference. He said the first factor was that of having a large volume of gas in the California fields and the plants were comparatively large, bringing the overhead cost per gallon to a lower figure. The second factor was that of operating under well pressure which reduced the investment for equipment to a much lower amount per gallon. The third factor is that of the nearness of the plants to large wells and these wells were within a very small area. He cited costs on a plant in California outside the larger fields which received its gas from 65 wells on scattered acreage requiring laying lines within a 10-mile square. The cost of production in this plant, he said, was now about 6½ cents per gallon and in this case was above that indicated for the average of the Mid-Continent. Another factor which was later given as a reason for the difference is that of producing the gas from very thick sand strata and as one stratum is depleted another is reached by simply drilling deeper. This saving is really one going to the production division but the advantage to the gasoline manufacturer comes with the fact that the manufacturer is able to keep his plant location year after year and is not forced to pay it out within a three, four or five-year period as is the case in the Mid-Continent.

**Entertainment Varied**

Probably the outstanding entertainment feature of the convention was the stag smoker given by the National Gasoline Supply Men's Association Tuesday night. The supply men who acted as official hosts at the convention have sponsored the annual smoker for the past three years and this year the occasion was "bigger and better" than ever.

In addition to the professional entertainment numbers the Supply Men's association presented a specially prepared film touching the high points in the development of the natural gasoline industry. Starting with the early days when both the operation and the product of the natural gasoline plants was considered highly hazardous the film traces the development to its present state of perfection when natural gasoline has become a necessary constituent of motor fuels.

Several contributed the ideas which made up the film which was produced under the direction of Frank T. Werner, assistant safety director of the Mid-Continent Oil and Gas Association.

All those attending the convention were guests of the supply men at Dutch lunches served on Monday, Tuesday and Wednesday. The annual dance sponsored by the association was given Wednesday evening at the Crystal Ballroom of the Mayo Hotel.

At the annual meeting of the Natural Gasoline Supply Men's Association a satisfactory growth was shown during the past year. The association was formed in 1928 to aid in the work of the Natural Gasoline Supply Men's Association with which it is affiliated. The association now has over 50 members consisting of manufacturing and supply companies serving the natural gasoline industry.

M. F. Waters, of Hanlon-Waters, Inc., Tulsa, is president of the association; W. A. Schlueter, Refinery Supply Co., and A. J. Kerr, Pittsburgh Equitable Meter Co., vice presidents, and M. H. Kotzebue, Tulsa Boiler & Machinery Co., treasurer. The directors are W. G. Cummings, Clark Brothers Co.; R. E. Howe, Atlas Supply Co.; J. B. McMahon, the Foxboro Co.; J. H. Satterwhite, Westcott & Greis, Inc., and Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.

## STUDENT ENGINEERS VISIT CALIFORNIA

Student petroleum engineers from the Colorado School of Mines photographed on a recent visit to the Universal Engineering Co., at Los Angeles, Calif. Reading from left to right: Rear row, E. A. Renfro, Sterl Kincade, E. L. Carter, Prof. B. B. Boatright, C. R. Kelly, J. F. Purdum. Front row, Hial Gernert, Floyd Carr, A. C. Stanfield, Herman Tryansky. This trip, in which about two weeks were spent in detailed study of California field and refinery methods, plays an important part in rounding out their college course.

## PENNSYLVANIA GRADE CRUDE CUT 25 CENTS

OIL CITY, Pa., May 16.—Because of overproduction of Pennsylvania grade crude oil the Seep Purchasing Agency reduced prices today 25 cents per barrel. At the same time the company announced that it had withdrawn as a buyer from the Bradford and Allegany Fields. The Tide Water Pipe Co. is the leading posting company in the Bradford-Allegany district and its price for crude in the two fields named is $2.50 per barrel while the Seep price in other fields is as follows: For oil in National Transit lines outside of Bradford district $2.30 per barrel; Southwest Penn lines $2.25; Eureka lines $2.15, and Buckeye lines $1.95.

## ROAD BUILDING SHOWS 100 PER CENT INCREASE

By Charles E. Kern

*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., May 19.—If automobile and gasoline consumption progresses at the same rate as road building an encouraging increase in the automotive and oil industries is sure to take place at once.

Road building throughout the country during the first quarter of 1930 showed an increase of more than 100 per cent over that begun during the same period last year, Secretary Lamont announced yesterday.

"The figures, which cover almost 75 per cent of the country, show contracts awarded for construction during the first quarter of this year valued at $114,101,383,'" the secretary said, "against $50,910,133 for the corresponding period of last year, a net increase of slightly over 124 per cent for the group of states which have reported so far.

"Three states, West Virginia, New Mexico and South Dakota, which awarded no highway contracts during the first three months of 1929, report awards totaling $4,367,075 for the first quarter of 1930.

"The greatest relative increases are shown in Ohio and Idaho. In the former State the awards for the first three months of this year were approximately 11 times greater than the corresponding quarter a year ago, while Idaho shows increased awards over 90 times larger than last year.

"Pennsylvania with contracts awarded valued at $15,469,853 for the first quarter of 1930, against $2,282,813 for the same period of 1929, has the greatest dollar value. This is an increase of 577 per cent.

"Contracts for highway construction in New Hampshire during the first quarter of this year increased 755 per cent, Washington 650 per cent, and Colorado 455 per cent.

"Other substantial increases were Oregon, 230 per cent; Maryland, 225 per cent; Iowa, 207 per cent; Wisconsin, 202 per cent; California, 181 per cent; Indiana, 165 per cent; North Carolina, 155 per cent; Missouri, 144 per cent; Florida, 109 per cent, and Virginia 100 per cent.

"Decreases over last year were reported for Kentucky, which declined 96 per cent; Michigan, 55 per cent; Delaware, 5.40 per cent; Montana, approximately 32 per cent, and Arkansas 1½ per cent.

"The great increase in early season highway construction is a matter of considerable national importance," said Secretary Lamont. "Improved highways represent a material contribution to the stabilization of business conditions of the present and the future, and the large volume of early awards may be especially significant in connection with the problem of spreading employment throughout the year.

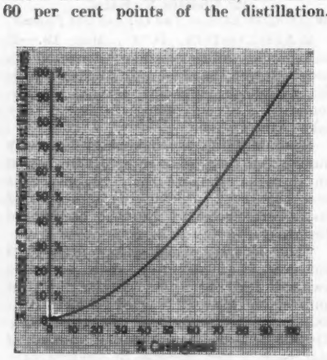
"It is estimated that nearly 50 cents of each dollar spent for highway building and maintenance is paid for labor involved."

# Blending Value of Natural Gasoline

## Charts Give Valuable Data Covering Distillation Loss, Volatility, Knock Rating, Vapor Pressure and Vapor Lock

By E. W. Zublin
Chief Chemist, Texas Pacific Coal & Oil Co.

Refiners have come lately more and more to realize the importance of natural gasoline. The motoring public has been educated by sales promotion to ask for high test or high volatility gasoline. Research has provided a large amount of data proving the importance of proper volatility. Recent work has very definitely correlated the A.S.T.M. distillation with certain phases of performance in the motor. Today we know that the ease of starting and the 10 per cent point of the A.S.T.M. distillation are closely related. Acceleration depends on effective volatility which in turn can be predicted from the intermediate, the 35 to 60 per cent points of the distillation.



*Distillation loss and natural gasoline blend.*

Volatility and knock rating show certain relations, and the troublesome vapor lock has now been recognized to be the result of excessive volatility.

Few crudes produce straightrun gasolines sufficiently volatile to conform with the prevailing standards. Most refiners have to add casinghead to their product, even when the requirements are no better than U. S. Motor specifications.

Blending with natural is an art as old as the natural gasoline industry. In spite of the many years, during which blending has been practiced, the quantities to be added are usually determined by guessing—a method based on the experience of the operator rather than on figures and charts. This is the more surprising as it is relatively easy to construct fairly accurate blending charts for various purposes. Perhaps the reason for this lack lies in the difficulty to find blending curves that apply to any grade of natural gasoline. This difficulty can be overcome by expressing all blending data in per cent of the difference between respective points.

It is the purpose of this paper to present a blending chart for practical use. The need for such a chart has long been known and it is hoped that this contribution helps to reduce the time and labor put up to blend gasoline to specifications and to permit process men to make more accurate calculations as to disposal of tanks and tank cars. This latter point is especially important in refineries where several grades of gasoline are manufactured, and where the tankage is limited. Very often a tank must be held because the laboratory will not give its OK, till more natural has been added. Many valuable hours may thus be lost. Such troubles can be avoided by consulting blending charts such as the one proposed.

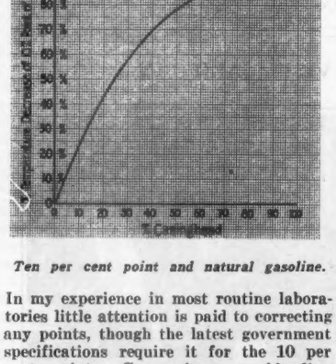
### Blending Data

In this paper no attempts have been made to give any theoretical explanation of the curves developed nor have calculations of any kind been made. The charts are merely the outcome of a systematic collection of blending data over a long period of time. As previously mentioned, they are based on the principle of expressing the properties of the blends in per cent of the difference between equivalent properties of the blending stocks. This per cent difference is plotted against the per cent natural gasoline. To make this point clear consider for instance the 10 per cent points of two blending stocks: That of a naphtha be 200° F. and that of a natural 70° F. The difference is 130° F. We find that upon addition of 20 per cent of this natural to the naphtha, the 10 per cent point of the latter drops to 144° F, which is 56° F. lower than the original. Fifty-six° constitute 43 per cent of the total difference 130°. This gives us one point for the curve at 20 per cent natural. On blending any other naphtha with 20 per cent of any other natural gasoline we find that the 10 per cent point of the naphtha again drops 43 per cent of the total difference within close limits.

The accuracy of the curves thus constructed is fairly good. The largest deviation ever fund and checked amounted to 5 per cent of the total difference or 5 per cent of the per cent natural added. Larger deviation always could be traced to poor mixing or errors in the A.S.T.M. distillation.

The properties covered by the present work are: The 10 per cent point, 50 per cent point and distillation loss of the A.S.T.M. distillation, the vapor pressure (and vapor lock) and the knock rating.

When working with the A.S.T.M. distillation or points of it one always has to keep in mind that there are two series to be considered; the one uncorrected, as it is taken down during the test, and the other one corrected for distillation loss.



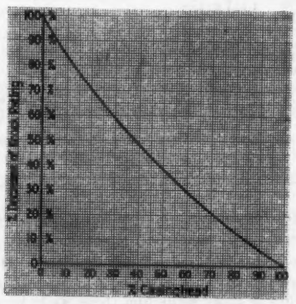
*Ten per cent point and natural gasoline.*

In my experience in most routine laboratories little attention is paid to correcting any points, though the latest government specifications require it for the 10 per cent point. Concerning our blending charts it was found that in order to make them applicable to all grades of naphthas or natural gasolines, the uncorrected 10 per cent and the corrected 50 per cent or higher points must be used. Just why this is the case is a matter of speculation. Possibly it has to do with the distribution of the distillation loss over the lower end of the distillation curves and also with the predominant influence of the lighter stock on the lower points only. For practical reasons it is fortunate that the 10 per cent point need not be corrected to figure the resultant blend.

It would be difficult and highly inaccurate to estimate the correction for the 10 per cent point of a natural with 10 per cent or more distillation loss. According to the Bureau of Standards a deduction of 5.4° F. shall be made for every cc. distillation loss below 5 cc. This represents a fairly good average correction and avoids the trouble of having to draw the distillation curve. However where the distillation loss exceeds 5 per cent the possible error of the average correction factor becomes so great that the distillation curve must be used; and where the loss is greater than 8 per cent, the 10 per cent can no longer be corrected accurately even with the aid of the curve, because in such a case the distillation loss is not confined to the first 10 per cent coming over, but is distributed over a much wider range.

### Fifty per cent Point

For the 50 per cent point conditions are quite different. It is necessary to



*Knock rating and natural gasoline.*

use the corrected values in order to obtain a smooth curve applicable to all grades of blending stocks. The difficulties encountered for correcting this point are not as great as for the 10 per cent point. For most purposes it is sufficient to deduct 2.4° F. for every cc. distillation loss, even where this loss exceeds 5 cc. If greater accuracy is desired the only way out is to draw the distillation curve and to translate it to the right for the amount of the loss.

Uncorrected points above 50 per cent are usually little affected by the addition of small percentages (less than 30 per cent) of natural. Addition of 10 per cent or less may even raise them slightly because the influence of the increase in distillation loss exceeds the actual lowering. The corrected points of natural blends (including the 90 per cent point) of course are always lower than those of the original naphtha. However, there is no simple way such as the deduction of a constant value for every cc. distillation loss to approximately correct the 90 per cent point. The distillation curve must be drawn and this is rather impractical. For these two reasons the 90 per cent point has not been included in the present series.

Other points of the A.S.T.M. distillation such as the initial boiling point, the 20 per cent and the final boiling point were omitted because according to work published by G. G. Brown of the University of Michigan and O. C. Bridgeman, Bureau of Standards, they have little or no relation to any of the actual performance characteristics.

Much has been said lately about vapor lock. Brown showed and the writer has done work supporting his opinion, that the best single test for vapor lock is the vapor pressure as measured by any of the methods giving reproducible results such as the Reid bomb method. In most gasolines the 10 per cent point and the vapor pressure show a close relation, but exceptions have been found. Brown's empirical formula correlating the 10 per cent point and vapor lock is subject to similar exceptions. Gasoline manufacturers who desire to estimate the vapor lock tendency of their product from the vapor pressure may consult the section on vapor pressure of the present chart. The scale for vapor lock temperatures is based on the assumption that vapor lock occurs or may occur at the temperature at which the Reid vapor pressure equals atmospheric pressure (14.7 pounds per square inch).

Brown observed that the temperature of gasoline in the average carburetor readily climbs as high as 100° F. one-half atmospheric temperature ° F. Therefore, the vapor lock temperature of gasolines should not be lower than the temperature calculated by the above formula, taking for the atmospheric temperature a high seasonal average of the district in which the product is sold.

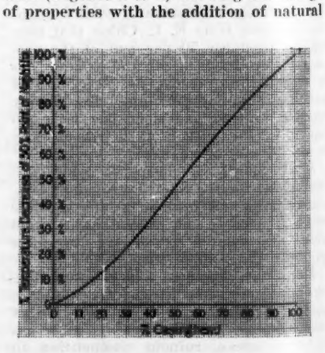
### Knock Rating

Noteworthy is the change of knock rating caused by the addition of natural. One might expect that the grade or the source of the natural would influence its knock rating. It was found, however, that all natural, with exception of some of the grades A have the same knock rating within close limits, as determined by the bouncing pin method and expressed in the Ethyl scale. The theoretical knock rating of natural is about zero, i.e. equal to the present Ethyl standard. Well stabilized natural gasolines, being superior from the point of view of volatility, very often have a slightly poorer knock rating. In preparing the curve showing the knock rating versus per cent natural, blends were made containing up to 70 per cent natural. Altogether 88 blended samples (not including Grade A) were tested and the following deviations from the curve were noted:

| No. of samples | Deviations |
|---|---|
| 32 | .0 cc. lead tetraethyl |
| 48 | .1 cc. lead tetraethyl |
| 4 | .2 cc. lead tetraethyl |
| 88 | |

Natural from Pennsylvania, Mid-Continent, California, West Texas, Gulf Coast and Venezuela were included in the tests.

The curves constructed from laboratory data (Figures 1 to 4) showing the change of properties with the addition of natural



*Fifty per cent point and natural gasoline blend.*

are the basis for the blending chart. In the latter the properties of the two blending stocks are evenly distributed on vertical scales, while the horizontal scales for the per cent natural gasoline have been derived by transcribing on the abscissa the vertical distances of the curves from the abscissa for various percentages of natural. By using such scales the curves for all properties become straight 45° lines. Thus the blending charts have been brought to a form in which all relations are expressed by straight lines.

and problems can be solved by the mere application of a straight edge.

**Use of Charts**

To explain the use of the chart the following example shall be demonstrated:

Example—A certain gasoline stock on hand having the following properties:

10 per cent at 200° F.

50 per cent at 291° F. uncorrected, 290° F. corrected.

Distillation loss one-half per cent.

Reid vapor pressure at 100° F. 4.2 pounds.

Knock rating 2.4 cc. lead tetraethyl poorer than Ethyl standard, shall be blended with a natural of the properties:

10 per cent at 70° F.

50 per cent at 110° F. uncorrected; 95° F. corrected.

Distillation loss 14 per cent.

Reid vapor pressure at 100° F., 32 pounds.

It is desired to produce a gasoline having a 10 per cent point of 150° F. uncorrected. How much natural is required? How will the other properties be affected? Is the blend safe from the point of view of vapor lock?

To find the per cent natural required, use Figure A. Connect with a straight edge the 200° point on the left hand scale with the 70° point on the right hand scale. Where the line intersects with a horizontal through 150°, draw a vertical line to the natural scale. Read the per cent, in our case 17½.

In order to find the 50 per cent point of the blend we must use the corrected data given. Connect the 290° point on the left hand scale of Figure B with the 95° point on the right hand scale by means of a straight edge. At the point of intersection with the vertical line through 18 per cent natural, draw a horizontal line. Read the corrected temperature, in our case 268° F.

In order to estimate the 50 per cent point as it would be read on the thermometer, the distillation loss must be determined in Figure C—in a similar manner as described above. For every cc. distillation loss below 5 cc. 2.4° F. must be added. In our example we find 1.5 cc. distillation loss and an uncorrected 50 per cent point of 272° F.

The Reid vapor pressure corresponding to 17½ per cent natural, as found on Figure D, is 9.4 pounds at 100° F., and the vapor lock temperature is 138° F. This gasoline is safe as to vapor lock at atmospheric temperatures up to 76° F.

The knock rating of the blend as determined on Figure F is 1.8, that is to say, 1.8 cc. of lead tetraethyl are required to make its knock equal to that of Ethyl standard.

Other problems, such as the determination of the properties required of a natural to produce a blend of certain specifications, can be solved just as easily with the present chart.

If there should be a demand for specifications of other properties not covered by this paper, such as the proposed per cent over at 100° F. for natural, additional charts can be constructed easily as long as the principles outlined here are followed.

## National Transit Co. Plans Expansion in Bradford Territory

BRADFORD, Pa., May 17.—The National Transit Co. has placed an additional trunk line in service between its Tuna and Duke Center stations, increasing capacity daily to 4,500 bbls. All of the crude gathered by the New York Transit Co. is delivered to the National Transit at Tuna, which method has been followed since last August from which date no New York Transit crude has been delivered to Olean. In August this crude averaged less than 600 bbls. daily and is now running in excess of 1,800 bbls. daily. The National Transit is receiving approximately 2,500 bbls. daily from the Bradford Transit Co. at Tuna for shipment to Oil City and southern refineries. The Bradford company's Tuna station is now running at full capacity regardless of the increased facilities which have been accompanied by a complete rebuilding of the station and installation of new equipment.

The National Transit is also receiving a large quantity of crude daily at Duke Center station from the Bradford Transit and other pipe lines and is now forwarding to Warren, Titusville and other southern refineries an average of 14,000 bbls. daily, which closely approaches maximum capacity.

It is reported that the company is considering laying 18 miles of 6-inch loop on its pipe line between Simpson and East Kane, which would increase the capacity about 7,500 bbls. daily. This, however, would give no relief to the Bradford situation unless the southern refineries can run an increased amount to stills daily. Recently the demand for the refined products has not been equal to the output, which has resulted in slowing up the pipe line deliveries and increasing stocks.

It is reported that the National Transit tankage for Bradford crude is now filled. The National Transit is making every effort to handle all the trunk line business offered as the company's investment and activity are now practically confined to this portion of the service.

To handle the increased business the Bradford Transit has contracted for the erection of five additional tanks. These are in addition to the nine tanks erected during the past eight months.

The Transit is making good progress on an additional 4-inch line from Foster Brook up the West Branch Valley to Clarks Corners, as well as on a 6-inch line from Foster Brook up the East Branch Valley to Degolia. The company is erecting a new pumping station at Foster Brook to have a capacity of 15,000 bbls. daily and is laying an additional 4-inch line from Foster Brook to its Rixford tank farm.

## WEATHER DOMINATES THE GASOLINE MARKET

(Continued from Page 44)

larger oil companies who desire to secure company-owned or controlled outlets continues on a broader scale than last year. Refiners who have had assured outlets over several years with certain jobber customers, almost overnight find themselves forced to hunt new connections due to the fact that another refining organization has purchased their customers' stations.

The buying companies have programs which call for complete coverage in certain territories with their own stations. They usually endeavor to purchase well established jobbing concerns and when that is not possible they build new stations. While the first plan is preferable to the last from the standpoint of the entire industry, because it prevents further duplication of station facilities, nevertheless it contributes to an unsettled condition in the spot market.

In some cases these expansion programs are not confined to sections but have as their objective the national distribution of products sold either on service station basis to consumers or on a tank wagon basis to dealers. The obvious effect of this trend in marketing is to reduce the tank car business of Mid-Continent refiners and the steady shifting of ownership forces many refiners to be constantly on the outlook for new jobber customers.

If one or more of the larger companies not accustomed to sell in the Middle West use that area as the dumping ground for excess gasoline during the coming summer months, it is feared that an already weak situation will become top heavy with a profitable market through the summer months impossible.

**Gasoline and Naphtha**

A few sales of U. S. Motor gasoline were made in Oklahoma last week as low as 6½ and 6⅝ cents. Some of these sales as previously explained came from brokers who apparently feared that the market might go lower before the end of the month. Two cases were cited in which resellers had bought gasoline over May and up to the fifteenth of the month had not ordered out any of the material due to their inability to interest jobbers.

Most sales of U. S. Motor gasoline were being made direct to the trade over a price range of 6¾ to 7¼ cents with several of the larger refiners continuing to quote 7½ cents. The latter price is in line with the prices being paid by a number of jobbers who have contracts with Middle Western jobbers and who are guaranteed a margin of 5½ cents under the service station prices or 4½ cents under the tank wagon.

The higher gravities are also moving slowly. Material with a gravity around 60-62 with an endpoint of from 410 to 420 usually commands very little if any premium over the regular U. S. Motor grade. The 390 or 375 endpoint grades for domestic movement have slumped to the point where they are now almost in line with the export basis of 7 cents for 390 and 7¼ cents for 375 endpoint.

Naphtha prices are unchanged.

**Fuel Oil and Gas Oil**

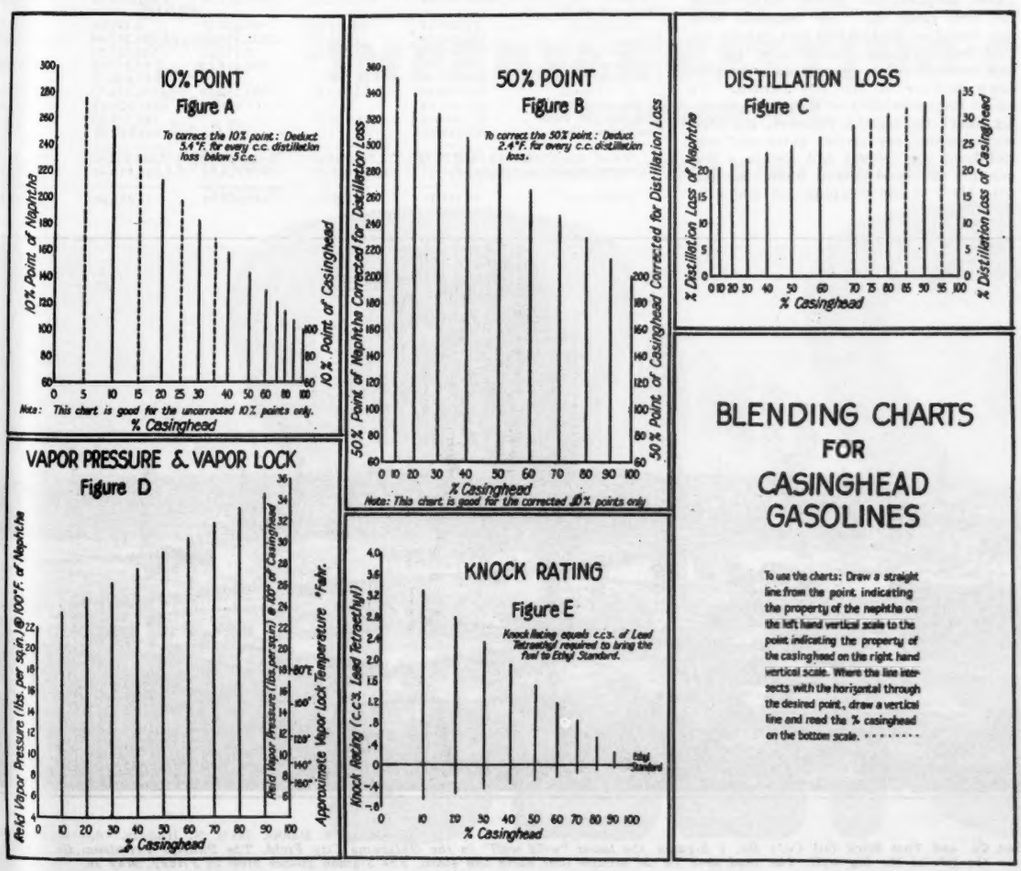
Both fuel oil and gas oil are sluggish. Except for a new low of 2⅛ cents for industrial gas oil, the general price ranges are unchanged. The fuel oil available in Oklahoma is largely confined to the low gravity material which is not suitable for cracking. The industrial demand in the Middle West has not improved and the movement from Oklahoma plants is slow.

A little low gravity and high viscosity fuel oil has been sold as low as 50 cents. The general range for the low gravity grades, however, is 52½ to 57½ cents. Sales of 18-22 gravity were made over at 55 to 60 cents. The higher gravity grades are not active. A 28-30 and 30-32 low cold test grade was available at 90 cents.

An Oklahoma refiner who buys considerable gas oil cracking stock from other refiners is reported to have reduced its price to 2¼ cents for 32-36 material. Sales of furnace oil grades were made as high as 2½ cents.

**Natural Gasolines**

Natural gasolines have slumped in price. The unsatisfactory refinery market has been reflected in the refinery demand for natural gasoline and prices on all grades are lower. Grade AA was available in Oklahoma on Monday and Tuesday at 5⅜ cents. Grade A was fairly firm at 5½ cents. The remaining grades


10% POINT
Figure A
To correct the 10% point: Deduct 5.4°F. for every c.c. distillation loss below 5 c.c.
10% Point of Naphtha
10% Point of Casinghead
Note: This chart is good for the uncorrected 10% points only.
% Casinghead
50% POINT
Figure B
To correct the 50% point: Deduct 2.4°F. for every c.c. distillation loss.
50% Point of Naphtha Corrected for Distillation Loss
50% Point of Casinghead Corrected for Distillation Loss
% Casinghead
Note: This chart is good for the corrected 50% points only
DISTILLATION LOSS
Figure C
% Distillation Loss of Naphtha
% Distillation Loss of Casinghead
% Casinghead
VAPOR PRESSURE & VAPOR LOCK
Figure D
Reid Vapor Pressure (lbs. per sq.in.) @ 100°F. of Naphtha
Reid Vapor Pressure (lbs. per sq.in.) @ 100°F. of Casinghead
Approximate Vapor Lock Temperature °Fahr.
% Casinghead
KNOCK RATING
Figure E
Knock Rating (c.c.s. Lead Tetraethyl)
Ethyl Standard
% Casinghead
BLENDING CHARTS FOR CASINGHEAD GASOLINES
To use the charts: Draw a straight line from the point indicating the property of the naphtha on the left hand vertical scale to the point indicating the property of the casinghead on the right hand vertical scale. Where the line intersects with the horizontal through the desired point, draw a vertical line and read the % casinghead on the bottom scale.

were being sold over a price range of 6 to 6¼ cents.

**Lubricants and Wax**

Neutral oils are the firmest product in Oklahoma lubricants. The demand is generally satisfactory for 200 three color and the higher viscosity grades. Another schedules is not improving the outlook schedules is not improving the outloow for Oklahoma steam refined stock and bright stocks. Prices are unchanged. Several export inquiries for wax were reported by manufacturers with no increases in the prices offered.

## Late Fields

(Continued from Page 56)

made 819 bbls. in 23 hours from sand at 2,914-55 feet.

The Payne Drilling Co.'s No. 1 Bullock, SE cor. NE Section 22-6-3, Pottawatomie County, in the new Wanette-Asher area, made 929 bbls. on the gauge of May 20. Same company's No. 2 Bullock was drilling at 2,920 feet.

Wilcox Oil & Gas Co.'s No. 1 Atkins, NW cor. SW Section 23-6-3, cored a sand at 3,512-17 feet, showing oil and gas and was landing 6-inch casing at 3,512 feet before drilling ahead. It is expected to be the second well completed in the Wanette-Asher Pool.

The South Earlsboro Pool made 11,470 bbls. from 19 wells on the gauge of May 20, most of the wells being curtailed under the proration agreement.

Amerada Petroleum Corp. and Dixie Oil Co.'s No. 2 J. Grounds, NW cor. Section 23-9-5, made 2,825 bbls. flowing against a back pressure of 75 pounds. Same operators' No. 3 J. Grounds, SW cor. NW NW Section 23-9-5, made 2,465 bbls. on the gas lift with 15 pounds back pressure.

The Tulsa Oil Co.'s No. 3 Gross, SE cor. SW NW Section 24-9-5, swabbed 92 bbls. in nine hours after a shot from the Wilcox sand at a total depth of 4,237 feet. It extends production in the pool 1 mile to the east.

### KANSAS

Another oil pool for the western part of Kansas was in prospect when the E. W. Marland, Inc. and others' No. 1 Gideon, NE cor., Section 8-15-14w, Russell County, 10 miles south of the Russell Pool, got the Oswald pay at 3,267-72 feet. Oil rose 1,100 feet in the hole in one hour. A later report showed oil had risen 2,200 feet in the hole in six hours. The well is on a 160-acre lease which the Allison-Fitzwilliam Petroleum Corp. and H. C. Schumacker, each owns a quarter interest, and E. W. Marland, Inc., owns a half interest. The new well is located about 4 miles northwest of the Ochs Pool, in the same county, which was opened by the Prairie Oil & Gas Co. and the Empire Oil & Refining Co. about a year ago.

The Texas Company's No. 2 Munn, C NE, Section 12-20-2w, Ritz Pool, McPherson County, has increased its production with deeper drilling. It was drilled 1 foot deeper in the chat pay. The chat was found at 2,970-75 feet, where it gauged 1,937 bbls. in 24 hours with 100 pounds back pressure.

## ANOTHER WILD WELL IN OKLAHOMA CITY

OKLAHOMA CITY, Okla., May 20.—Phillips Petroleum Co., Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Sigmon, NW cor. SW, Section 32-11-2w, in the Oklahoma City Field, has been blowing wild since Friday noon, May 16. The well extended production one location southeast on the south edge of the pool. It is located on a 2,840-acre block in which Phillips Petroleum Co. owns half interest, Prairie Oil & Gas Co. and Tom Slick Oil Co. each own a quarter interest. A number of other tests are being drilled on the same block by these owners.

No. 1 Sigmon blew in with an initial production estimated between 15,000 and 25,000 bbls. a day of oil and between 100,000,000 and 200,000,000 feet of gas. When the well is brought under control it will be curtailed under the regular proration plan. The well is one-half mile east of the other wild well, the Indian Territory Illuminating Oil Co.'s No. 1 Mary Sudik, which blew wild for 11 days.

The Mary Sudik well brought forth the requirement that all drilling wells in the Oklahoma City Pool must be provided for unexpected emergencies before being drilled in. In compliance with these requirements two heavy master gate valves weighing over a ton and a control head weighing another ton were assembled at the top of the casing on the No. 1 Sigmon in readiness for any emergency. These preparations proved futile when the well came in. The Simpson sand was found at 6,345-6,610 feet, where the well began gassing and flowing oil.

A score of offset operations were shut down because of the fire hazard. To lessen the probability of the casing bursting under the terrific pressure, the crew began closing the master gates and control head very slowly but within a few minutes the sand driven under the terrific blast of the escaping gas under 2,000 pounds pressure, cut the steel gates until they could not be closed. Then the 6-inch casing burst between the lower and upper master gates.

The engineers were immediately confronted with a condition as serious as that attending the Mary Sudik well and decided upon three probable methods of gaining control.

The first method was to replace the old master gates and the split casing between the master gates in the face of the oil and the enormous gas pressure.

The second method was to assemble two master gates and a control head on a joint of 9-inch casing and force the casing with its 3-ton load with additional pressure from cables operating through pulleys at the base of the derrick, down over the 6-inch casing. The lower end of the 9-inch casing was clamped onto the 9-inch casing which rested in its normal position at the top of the hole around the 6-inch casing.

As a last resort the engineers decided to adopt the method used successfully by the Indian Territory Illuminating Oil Co. in gaining control of the wild Mary Sudik gusher where a 3-ton overshot nipple or bell which cuts its own thread will be forced onto the 6-inch casing after the damaged master gates have been removed.

Earthen pits have been dug and built up around the well so that the most of the oil is being trapped and pumped into storage tanks. The wastage of oil is small. The wind has remained steady throughout the time the well has been wild and the crude oil has fallen into the pits.

A fire zone was created a half mile north of the well and a mile south, guards refusing visitors permission to get near the well.

The fire menace became greater today when a changeable wind blew the oil in different directions and sprayed the field for several miles around. Only a relatively small amount of crude oil has been recovered thus far. The gauge of the picked up oil on May 18 was 2,310 bbls.; on May 19, 1,825 bbls., and on May 20, 1,370 bbls. The immediate proximity of the Phillips Petroleum Co. gasoline plant hampers the picking up of the oil, and the land does not slope in one direction.

It is estimated the No. 1 Sigmon is not as large an oil producer as the Mary Sudik, and neither is the near-by surface as suitable for recovering oil.

### ADAMS HEADS SCOUTS

SAN ANTONIO, Tex., May 20.—J. V. Adams of the Humble Oil & Refining Co., San Antonio, was elected president of the National Oil Scouts' Association here today. John Langston of the Sun Oil Co. of Dallas was elected first vice president.

Other officers elected were G. C. Phillips of the California Co., San Angelo, second vice president; J. E. Beall of the Gulf Production Co., San Antonio, secretary-treasurer, and W. E. Witcomb of the California Co., San Antonio, chairman of the executive committee.

### DEATH OF BEN M. BELL

Ben M. Bell, recently resigned president of Pandem Oil Corp., of Wichita Falls, Tex., died suddenly at Muskogee, Okla., Monday, May 19. Mr. Bell was the first president of the National Oil Scouts Association, which is now in session at San Antonio, Tex.

**Summary of Statements Relating to Business of Various Pipe Lines for Month Ending April 30, 1930**

| | Gross stocks | Runs from wells | Other receipts | Regular deliveries | Other deliveries |
|---|---|---|---|---|---|
| National Transit ... | 894,630.87 | 511,636.96 | 721,409.46 | 538,543.39 | 559,108.12 |
| S. W. Pa. P. L. .... | 487,667.73 | 94,433.99 | 658,415.96 | 348,887.86 | 438,337.55 |
| Eureka P. L. ..... | 1,409,115.67 | 377,836.98 | 423,436.88 | 287,079.07 | 584,247.81 |
| Buckeye P. L. (Macksburg) ..... | 764,140.88 | 376,268.67 | 56,676.24 | 227,190.48 | 213,299.55 |
| Buckeye P. L. (Lima, etc.) .... | 5,165,207.69 | 103,221.52 | 1,986,251.96 | 1,431,000.16 | 680,537.38 |
| Buckeye P. L. (Cleveland) ..... | 73,693.91 | 10,318.98 | 60,538.29 | 2,439.12 | 74,011.74 |
| Indiana P. L. ..... | 829,605.80 | 4,984.94 | 2,735,170.54 | 1,380,203.09 | 1,400,383.08 |
| Cumberland P. L. ... | 656,666.76 | 184,988.20 | 2,175.86 | 138,683.74 | ..... |
| Southern P. L. ..... | 383,621.23 | ..... | 264,531.12 | 68,977.25 | 157,086.80 |
| Bradford Transit .. | 240,977.09 | 516,334.50 | ..... | 526,606.59 | ..... |
| N. Y. Transit ..... | 360,830.26 | 41,060.87 | 193,188.30 | 195,653.82 | 42,517.99 |
| Northern P. L. .... | 459,802.99 | ..... | 317,061.11 | 224,924.57 | 225,471.54 |
| Tide Water Pipe ... | 961,044.43 | 28,838.87 | ..... | 505,766.80 | ..... |
| Tuscarora Dev. .... | 265,118.45 | ..... | ..... | 517,567.99 | ..... |
| Total April 30 .. | 12,952,123.76 | 2,249,924.48 | 7,418,855.72 | 6,393,523.93 | 4,375,501.56 |
| Total March 31.. | 12,980,539.51 | 2,108,628.57 | 7,822,724.84 | 6,319,612.43 | 4,403,622.92 |
| Difference ..... | 28,415.75 | 141,295.91 | 423,869.12 | 73,911.50 | 28,121.26 |

—Ward & Banks, 505½ N. Hudson, Oklahoma City.

*The Phillips Petroleum Co., Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Sigmon, the latest "wild well" in the Oklahoma City Field. The Phillips Petroleum Co.'s gasoline plant on the lease is shown to the left of the big well. The road seen in the picture runs north and south. The Sigmon gusher blew in Friday, May 16.*

# CHECK *and* DOUBLE CHECK

(Amos & Andy)

This is being done in the oil industry every day—on every material.

In no other industry is the "process of elimination" so drastic.

To have withstood this "weeding out" is proof evident of possessing the essential qualities to meet the exacting demands of the oil industry.

O&G Made friends 20 years ago and has continued to make and keep them since that time.

O&G Has not failed.

O&G Has not been nudged out.

O&G To-day has more friends than ever.

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**IMPERIAL BELTING CO.**

**CHICAGO, ILL.**

*Manufacturers of High Grade Fabric Belts*

# O AND G BELTS

# Of Interest to Sales Departments

## Folder Encourages Motoring Vacations For Coming Season

Two new folders for filling station or direct mail distribution by oil companies have been published by the American Petroleum Institute.

One is "Fill 'Er Up—Make it a Motoring Vacation," designed to encourage the use of gasoline through vacation use of the motor car. The folder outlines the pleasures, economy, advantages and possibility of independent action possible through a motoring vacation, and suggests that the vacationist drive to a filling station, get his oil, gasoline, water and other supplies, ask for touring information, step on the starter and go.

"The open road! The family car! A tank filled with that ideal fuel, gasoline," reads the folder. "These are the essentials of a real vacation! No ticket to buy, no trains to catch, no schedule to follow—just step on the starter and go.

"If you see a road that intrigues you, follow it. If you find a stopping place that pleases you, stay as long as you like. If you want to go faster, slower; here, there; north, south, east, west—just go. You're your own boss on a motoring vacation!"

The folder explains why gasoline is a remarkable fuel because of its instant starting, dependability, efficiency, ample power and low cost.

**Gasoline is Cheap**

The second is entitled "Gasoline is Cheap, but Why Waste It?" This folder has been issued in the interest of conservation of national petroleum resources. It tells the motorist how he wastes gasoline and how the waste can be overcome.

"The American petroleum industry is co-operating with the Government in an effort to conserve this country's irreplaceable petroleum resources and assure a future supply of oil and gasoline," the folder explains. "From oil field to filling station effort constantly is being made to prevent waste.

"Government and industry are doing their part. The motorist ought to do his, because conservation of petroleum resources means fuel in his tank and money in his pocket. Mr. and Mrs. American Motorist, you are getting the best motor fuel in the world at the lowest price in the world. Prevent waste! Spare the gas and save your car and pocketbook by buying good gasoline from established manufacturers, keeping your machine functioning properly, driving safely and sanely."

## AVIATION DEMAND FOR PRODUCTS TO INCREASE

WASHINGTON, D. C., May 16.—Additional demands for aviation gasoline is seen in the activity of the Government in training flocks of airplanes in scouting tactics. The greatest concentration of military airplanes ever seen in the national capital is scheduled for maneuvers when 123 fighting, scouting and torpedo planes composing 10 squadrons from the three navy aircraft carriers are to pass over this city before landing at the Anacostia Naval air station for refueling. This review brings together more than twice the number of planes previously seen at any one time here. Last week 59 of the navy visitors passed in formation over the city before leaving for New York. The squadrons have been away from their home station on the West Coast since February and have been engaged in battle maneuvers and practical exercises at the Panama Canal and in the Caribbean Sea.

## OIL BURNING ENGINE TESTED IN AVIATION

By Charles E. Kern
*Washington Bureau, The Oil and Gas Journal*

WASHINGTON, D. C., May 17.—Flight demonstrations at Bolling Field and Anacostia Naval Air Station, Washington, D. C., of the new Pratt & Whitney oil-burning aviation engine may lead to experimental work with the motor by the Army Air Corps and the Navy Bureau of Aeronautics.

The engine, though it burns heavy fuel oil, is not a Diesel type. The engine demonstrated here is the standard Wasp, with fuel-injection pumps to each cylinder replacing the ordinary carburetion system. The ignition system remains unchanged, the fuel oil being fired by electrical spark rather than by the heat generated by compression, as in the case of the Diesel.

The engine, it is claimed, develops greater power with gasoline as the fuel than the ordinary engine and provides perfect operation at any temperature or any position of the engine in the air. Cold starting is said to be no handicap and the problem of ice formation in the carburetor, a serious problem under certain conditions with carburetor fuel vaporization, is said to be eliminated. Reliability is said to be increased, since the operation of the engine is not stopped by failure of one or more cylinders. The engine weight is not increased.

For the demonstrations here the engine was mounted in a Boeing military plane, the standard Army P-12 pursuit type, or the Navy fighter type. In this plane the engine can be put to the most severe type of tests occurring in practical operations, it is claimed.

The demonstrations here were witnessed by Rear Admiral William A. Moffet, chief of the Navy Bureau of Aeronautics, F. Trubee Davison, Assistant Secretary of War for Aeronautics, and other Federal aviation heads.

## GASOLINE IMPORTER TO PAY TEXAS TAX

AUSTIN, Tex., May 17.—When a company imports gasoline into Texas for its own use it becomes a "wholesaler" under the state gasoline tax law, and the use of the product becomes the first completed transaction and makes the firm liable for the 4-cent gasoline tax. This contention of the State will be tested out in the suit filed on behalf of the State by Attorney General Robert Lee Bobbitt against Wichita Traction Co. of Wichita Falls, in Ninety-eighth District Court of Travis County.

The State sued the company for $33,300 in taxes and penalties on car load gasoline imported by it from Oklahoma and used in operation of its motorized traction service at Wichita Falls. The State's petition contended no separate sale was made in the State, and under the gas tax law the first completed transaction on which the tax accrued was the use of the gasoline, and that such use made the company "wholesale dealer or distributor as defined in Chapter 88, Laws of Texas."

The suit asked penalties of $1,000 per day for each of the days on which unrendered semimonthly reports were demanded; and $1,000 a day for each date the tax was allegedly due and remained unpaid, and a penalty of $300 covering expenses of the comptroller's department in investigating and preparing the claim.

The suit asked judgment, appointment of a receiver for the property and for foreclosure of the lien accruing under the tax claim. The case has not yet been set for trial.

## NEW PAMPHLETS FOR FILLING STATION USE

NEW YORK, May 17.—Two pamphlets, second and third of a series of six on various phases of the petroleum industry with which the public directly is concerned to be published this year by the American Petroleum Institute, have been released for filling station and mail distribution by oil companies.

One pamphlet, designed to encourage gasoline sales, is entitled "Fill 'Er up! Make It a Motoring Vacation." It explains the advantages of a motoring vacation for the American family, pointing out the economy, ease and enjoyment with which such a vacation can be planned and enjoyed without the necessity of resorting to time tables, established routes or dependence upon others. It also explains the advantage of using gasoline, the ideal motor fuel.

The second pamphlet, "Gasoline Is Cheap, But Why Waste It," represents an effort on the part of the industry to further the cause of conservation by suggesting ways and means the motorist can save fuel. Common causes of waste are listed and their remedies suggested.

The first of the series, "Drama Behind Your Gas," was issued some time ago. The Institute also has published this year two folders on gasoline taxes, one, "The Open Road," and the other, "Where Does My Mileage Go?"

## TEST ON PROHIBITION OF FILLING STATIONS

WASHINGTON, D. C., May 17.—In the State of North Carolina an ordinance was passed by Elizabeth City prohibiting the construction of filling stations within a defined zone providing that a violation of the ordinance would be a misdemeanor. The Supreme Court of North Carolina in denying the city injunctive release held that the proper proceeding for the city was a criminal prosecution for violating the statute as the filling station did not constitute a nuisance per se.

In rendering the opinion of the court, Judge Clarkson remarked that municipalities are subject to law by other corporations or persons and that the plaintiff, the corporation of Elizabeth City must be mindful of the fact that under the guise of police regulations protecting the public, attempts have been made to curb the free use of private property that is not a nuisance per se. This will raise a constitutional question that may have wide application to restrictions on filling stations in many localities.

## CHANGE ILLINOIS REGULATIONS

CHICAGO, May 17.—The Illinois Department of Trade and Commerce, Division of Fire Prevention, has reissued the rules and regulations governing the storage, transportation, sale and use of gasoline and other volatile oils. The revision of these rules is brought down to February 26, 1930. Fire Marshal S. L. Lwgride states that some important changes have been made and that every oil man doing business in the State should be familiar with these changes. The published copy contains the latest regulations regarding the use of fuel oil and of oil burners. Copies may be had from the fire marshal's office, Springfield, Ill.

## CITIES SERVICE STATIONS

NEW YORK, May 17.—Cities Service Oil Co. of England, established 2½ years ago, has established a number of depots and filling stations throughout Great Britain. The company markets its products in Great Britain under the trade name "Citex."

## NEW CONSISTOMETER AT STANDARD BUREAU

A new consistometer has been devised by Ronald Bulkney, assistant chemist, and F. G. Bitner, junior scientific aide, United States Bureau of Standards. This device is to measure properties of greases and oils at low temperatures. It has just been described in Rheology after having been tested out. It can be employed for either opaque or clear materials of a wide range of consistencies.

At the present time there is a great dearth of instruments with which viscosities higher than 30 or 40 poises can be measured to an accuracy of 5 per cent without an excessive consumption of time. With the present instrument the rapid measurements of viscosities to several thousands of poises may be measured with a high degree of accuracy. The consistometer is speedy in operation and permits the taking of any number of flow-pressure graphs at the same or different temperatures, without refilling or removing from the bath. It is suitable for materials which change in consistency with time or with mechanical workings.

Certain oils at low temperatures show the property of thixotrophy and require a standardized period of cooling to assume a reproducible consistency.

## FUEL OIL CONTRACTS FOR NAVY AWARDED

NEW YORK, May 17.—Contracts for approximately 7,248,600 bbls. of fuel oil for the Navy's requirements for the fiscal year 1931 were awarded by the Bureau of Supplies and Accounts of the Navy Department this week. The largest contracts were awarded to The Texas Company, Union Oil Co. of California and the Magnolia Petroleum Co. The awards were as follows:

Grade C fuel oil for delivery at East Coast navy yards and stations:

| Company— | Barrels | Total price |
|---|---|---|
| Magnolia Pet. Co. | 987,500 | $1,008,170 |
| Gulf Ref. Co. | 660,000 | 930,960 |
| Mexican Pet. Corp. | 145,000 | 188,438 |
| Maritime Oil Co. | 147,500 | 165,475 |
| Cities Service Ref. Co. | 75,000 | 109,125 |
| Standard Oil of Ky. | 67,000 | 75,750 |
| Colonial-Beacon Oil Co. | 60,000 | 75,000 |
| Shell Eastern Pet. Corp. | 52,000 | 63,300 |

For fuel oil for delivery at West Coast navy yards and stations:

| Company— | Barrels | Total price |
|---|---|---|
| The Texas Company | 2,000,000 | $1,392,000 |
| Union Oil Co. | 1,809,000 | 1,724,377 |
| Shell Oil Co. | 700,000 | 374,500 |
| Hancock Oil Co. | 300,000 | 177,000 |
| Richfield Oil Corp. | 10,000 | 18,400 |
| Standard Oil of Calif. | 4,000 | 4,400 |

For fuel oil for Diesel engines for delivery at East Coast navy yards and stations:

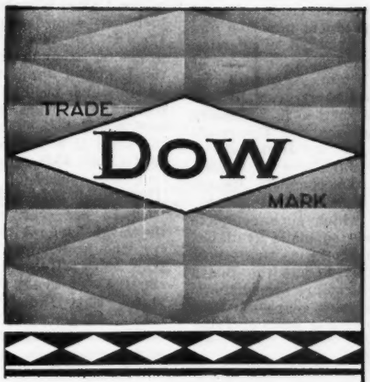
| Company— | Barrels | Total price |
|---|---|---|
| Standard Oil of N. J. | 39,500 | $88,404 |
| Atlantic Ref. Co. | 30,000 | 75,348 |
| Tide Water Oil Co. | 22,000 | 46,000 |
| Colonial Beacon Oil Co. | 13,000 | 32,630 |
| Cities Service Ref. Co. | 10,000 | 13,100 |
| Maritime Oil Co. | 8,500 | 15,300 |
| Warner-Quinlan Co. | 4,500 | 10,678 |
| Shell Eastern Pet. Co. | 2,500 | 5,495 |
| Gulf Ref. Co. | 2,500 | 5,250 |

For fuel oil for Diesel engines at West Coast navy yards and stations:

| Company— | Barrels | Total price |
|---|---|---|
| Richfield Oil Co. | 88,000 | $98,845 |
| Union Oil Co. | 20,000 | 28,800 |
| Standard Oil of Calif. | 600 | 1,134 |
| Associated Oil Co. | 250 | 420 |
| General Petroleum Co. | 250 | 395 |

## NEW TIDE WATER TANKER

The Tide Water Oil Co. has placed in service a 75,000-bbl. tanker, Veedol No. 2. This is the second tanker of this type to be purchased by the Tide Water company. The tanker is the electric Diesel engine type and will be used in Atlantic Coast trade.




# DOW

## *Carbon Tetrachloride 99.9%*

### Non-Inflammable Non-Explosive

**Dow Carbon Tetrachloride 99.9% gives protection against fire or explosion when mixed in proper proportions with naphtha, benzol, gasoline and other inflammable solvents. It is a practical, inexpensive solvent for use in operations or lines of business where the use of solvents is necessary but where fire safety is essential or desirable. The use of Carbon Tetrachloride lowers insurance rates and obviates the necessity for isolation of certain operations involving the use of inflammable solvents.**

## *An Efficient Dry-Cleaning Agent*

**In addition to providing safety against fire this Dow product has many remarkable qualities that make its use desirable in commercial dry cleaning. It cleans the most delicate fabrics without injury and evaporates without residual odor.**

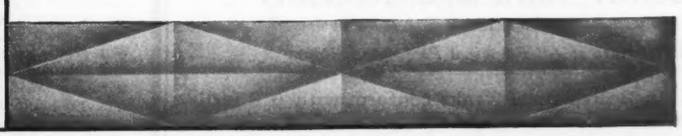
## *Can Be Reclaimed Easily*

**Dow Carbon Tetrachloride may be redistilled for use over and over again as it does not separate on fractional distillation. Comparatively inert chemically, it does not decompose readily.**

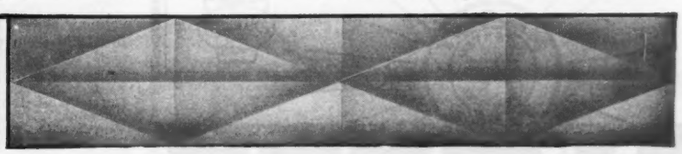
***We Will Gladly Co-operate With Your Technical Department and Submit Samples. Let Us Quote On Your Requirements.***

**A PARTIAL LIST OF DOW INDUSTRIAL CHEMICALS**

Aniline Oil
Calcium Chloride
Carbon Bisulphide 99.9%
Carbon Tetrachloride 99.9%
Caustic Soda
Chloroform
Epsom Salt
Ethyl Bromide
Ethyl Chloride
Ferric Chloride
Ferrous Chloride
Phenol
Magnesium Chloride
Monochlorbenzene
Monochloracetic Acid
Sodium Sulphide
Sulphur Chloride

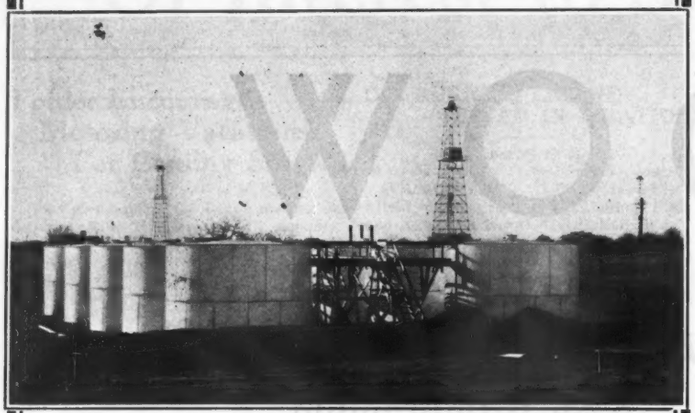


## THE DOW CHEMICAL COMPANY—MIDLAND, MICHIGAN



*Branch Sales Offices*
90 West Street, New York City
Second and Madison Streets, St. Louis

*A Battery of Ten 1,000-Bbl. Maloneys in the Oklahoma City Field. Erected by Maloney Sales Corp., distributer.*



# MALONEY *Vapor-Pressure* TANKS are Designed to Eliminate Waste

On hundreds of leases, large and small, there is a vast waste of good oil through breathing of the lease tanks. Our Vapor-Pressure Tanks are manufactured to eliminate this waste by holding the contents under proper pressures to restrict the movement of vapors.

Profit in oil producing depends largely upon the elimination of waste. Since MALONEY Vapor-Pressure Tanks protect the volume of the oil and maintain it at well gravity, they enable operators to substantially increase net profits.

Users of these tanks are not only practising conservation but are making more money.

*"Alone in Quality"*

MALONEY TANK MFG. COMPANY
Tulsa, Okla., U.S.A.

*Distributers at All Principal Petroleum Points*

Maloney A.P.I. Bolted Steel Tanks conform with A.P.I. dimensional standards and carry the official A.P.I. monogram.

MADE OF AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY TANKS ALONE

# UNITED KINGDOM DRAWS LARGELY ON U. S. FOR REFINED PRODUCTS

LONDON, England, May 17.—While the monthly statistics issued by the Board of Trade relating to the trade and navigation of the United Kingdom contains the details of the crude oil and various petroleum products imported and exported, only in the case of Persian crude imports is any indication given of their countries of origin. A careful dissection of the weekly returns of the Custom House authorities is necessary to arrive at this information. The result of such a survey for the first half of 1929 was given in our issue of December 14 last, and the complete figures for the year have now been compiled—the first year for which such complete information has been so made available, says the Petroleum Times.

It may be mentioned that the Board of Trade annual returns are issued shortly after the close of each year—the 1929 returns being given in our issue of January 18—but to what extent they represent the final official figures for the year is a matter of some conjecture, since the weekly Customs returns normally show amendments of additions and deductions to previous entries for several months after the original entry at the time of the cargo's arrival. This fact may account for the differences between the Board of Trade returns and those presented here based on Custom House returns for the following crude oil, motor spirit, kerosene, gas oil, lubricating and fuel oils.

Crude oil imports for 1929 totaled 466,283,000 gallons, of which 313,316,000 gallons, or 67.3 per cent, came from Persia. In 1928 the proportion of Persian crude (based on Board of Trade returns) was 82 per cent. While the quantity of Persian crude imported has shown a decided decrease, that from other countries has risen appreciably. Venezuelan crude made its first appearance in commercial quantities for English refining during the second half of last year, while Colombian crude has been imported in increasing amounts. The crude oil from Trinidad was chiefly brought in by the Anglo-Persian group for admixture with Persian crude for refining purposes. The amount of American crude brought in was insignificant and this and fuel oil are the only oil imports in which American deliveries did not predominate over those of other countries. Definite comparison with previous years is not possible in this survey owing to the absence of such data as here presented for previous years.

The following table based on Customs returns shows the imports of crude oil for 1929 from the various countries:

| | Gallons | Pct. |
|---|---|---|
| Persia | 313,316,000 | 67.3 |
| Dutch West Indies | 48,340,000 | 10.4 |
| Colombia | 44,802,000 | 9.5 |
| Venezuela | 22,091,000 | 4.7 |
| Trinidad | 18,524,000 | 4.0 |
| Mexico | 13,714,000 | 2.9 |
| United States | 5,493,000 | 1.2 |
| Other countries | 3,000 | .. |
| Total | 466,283,000 | 100.0 |

The Board of Trade returns showed a total of 487,634,045 gallons, made up of 339,802,123 gallons from Persia and 147,831,922 gallons from other countries.

The table shows the countries of origin of the imports for the five principal products constituting the petroleum trade of the United Kingdom. The products not included comprise chiefly white spirit ("spirit not motor spirit") and "other products," though it is impossible from the Board of Trade returns to determine under which heading are placed such deliveries as "crude distillate" and "kerosene distillate." From the last column of the table it will be seen that the United States had 45.9 per cent of the trade, a long way ahead of all other countries. The Dutch West Indies came second with 15 per cent, chiefly by reason of the large fuel oil trade with this country, the proportion held by other countries being: Russia, 12.3 per cent; Persia, 9.4 per cent; Mexico, 6 per cent; Dutch East Indies, 4.2 per cent; Rumania, 4.1 per cent; Trinidad and Straits Settlements (Singapore), 1.2 and 1.1 per cent, respectively. Emphasis should be laid here on the fact that this total does not include the figures for imports of white spirit—though not always clearly designated as such in the Customs returns—and that in the case of Rumania, this product constitutes a large proportion of that country's oil export trade with this country.

In the motor spirit trade of the United Kingdom the United States easily led the way with 54.8 per cent of the total imports, the next in importance being Persia with 15.2 per cent, followed by Russia with 9.5 per cent, and the Dutch East Indies with 7.5 per cent. The remaining countries sent us only relatively unimportant proportions; thus Rumania had 3.5 per cent, and the Straits Settlements 2.1 per cent. The United States also had 37 per cent of the kerosene trade, but in this respect did not greatly predominate over Russia with 32.2 per cent, while the only other importing countries of note were Rumania and Persia with 10.3 and 9.7 per cent respectively.

**UNITED KINGDOM OIL IMPORTS FOR 1929**
(From H. M. Custom House Returns)

| Country— | Motor spirit gallons | Kerosene gallons | Gas oil gallons | Lub. oil gallons | Fuel oil gallons | Total (5 products) gallons |
|---|---|---|---|---|---|---|
| United States | 452,858,000 | 91,273,000 | 61,777,000 | 66,191,000 | 52,390,000 | 734,489,000 |
| Dutch West Indies | 41,189,000 | ..... | 16,761,000 | ..... | 182,994,000 | 240,944,000 |
| Russia | 78,731,000 | 79,473,000 | 8,024,000 | 11,172,000 | 20,203,000 | 197,603,000 |
| Persia | 125,834,000 | 23,961,000 | ..... | ..... | ..... | 149,795,000 |
| Mexico | 12,314,000 | 19,649,000 | 11,600,000 | 8,642,000 | 43,269,000 | 95,474,000 |
| Dutch East Indies | 61,423,000 | 4,908,000 | ..... | ..... | 290,000 | 66,621,000 |
| Rumania | 28,964,000 | 25,437,000 | 2,677,000 | 2,198,000 | 5,985,000 | 65,311,000 |
| Trinidad | 4,419,000 | ..... | 2,850,000 | ..... | 12,611,000 | 19,880,000 |
| Strait Settlements | 17,631,000 | ..... | ..... | ..... | 178,000 | 17,809,000 |
| Others | 2,916,000 | 1,869,000 | 218,000 | 5,305,000 | 3,170,000 | 13,478,000 |
| Total | 826,279,000 | 246,620,000 | 103,907,000 | 93,508,000 | 321,090,000 | 1,601,404,000 |
| Board of Trade 1929 Returns— | | | | | | (all products) |
| Imports | 810,020,637 | 255,141,533 | 113,940,494 | 97,969,183 | 406,696,466 | 1,709,870,884 |
| Exports (produce and manufacture of U.K.) | 28,857,063 | 16,378,969 | 15,905,788 | 7,660,615 | 38,380,131 | 110,955,152 |
| Exports of imported oils | 78,936,245 | 12,760,950 | 2,967,828 | 2,669,672 | 3,063,020 | 102,230,448 |

In gas oil imports America again had over half the country's trade with 59.5 per cent, the Dutch West Indies having 16.1 per cent, and Mexico 11.2 per cent. The United States and Russia shared the bulk of the lubricating oil trade between them, America, with 70.8 per cent, having by far the major share, Russia's proportion being 11.9 per cent. After these two came Mexico with 9.2 per cent, while the large proportion of 5.7 per cent of lubricating oil imports shown from "other countries" is accounted for by deliveries from various European ports whose actual source of origin is difficult to determine.

The fuel oil trade of the United Kingdom was the only one in the United Kingdom in which the United States did not predominate, the Dutch West Indies having 50.7 per cent, as against America's 16.3 per cent. Mexico, with 13.5 per cent, exported more of this product to this country than any other, while Russia's share was 6.3 per cent, that of the remaining countries being insignificant.

## NATURAL GASOLINE PLANTS BY STATES

(Continued from Page 114)

**CALIFORNIA (Continued)**

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Gilmore-Dabney, Walnut Avenue and Hill Street, Long Beach | Sec. 29-4s-12w | Absp. | 30,000 |
| Gilmore-Dabney, Walnut Avenue and Hill Street, Long Beach | Sec. 24-4s-13w | Absp. | 30,000 |
| Gilmore-Dabney, Walnut Avenue and Hill Street, Long Beach | Sec. 24-4s-13w | Absp. | 33,000 |
| Highway Gasoline Co., Box 1025, Ventura | Sec. 21-3n-23w | Absp. | 12,000 |
| Honolulu Consolidated Oil Co., Taft | Sec. 8-32s-24e, M.D.B.&M., Kern County | C-A | 50,000 |
| Lomita Gasoline Co., Box 669, Signal Hill | Signal Hill | Absp. | 85,000 |
| Montebello Oil Co., Fillmore | Shields lease | Absp. | 3,000 |
| North American Oil Consolidated, Room 915, Balfour Bldg., San Francisco | Sec. 28-31s-23e, M.D.B.&M., Kern County | Absp. | 3,000 |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | Little Lake Road, Santa Fe Springs | Absp. | 120,000 |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | Fillmore | Absp. | 30,000 |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | Saticoy | Absp. | 50,000 |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | Taft | Absp. | 14,000 |
| Norwalk Co., The, 111 W. Seventh St., Los Angeles | Maricopa Flats | Absp. | 5,000 |
| Pacific Western Oil Co., 714 W. Tenth St., Los Angeles | Inglewood | C-A | 5,000 |
| Pacific Western Oil Co., Drawer Z, Ventura | Ventura Avenue | Absp. | 3,000 |
| Pacific Western Oil Co., Drawer 86, Goleta | Elwood | Absp. | 2,000 |
| Rancho La Brea Oil Co., 629 S. Spring St., Los Angeles | 5864 W. Third St. (known as Salt Lake) | Absp. | 5,000 |
| Reservoir Hill Gasoline Co., 417 S. Hill St., Los Angeles | Lot 24-C, City of Long Beach | Absp. | 30,000 |
| Rice Ranch Oil Co., Orcutt | Santa Maria Field | Absp. | 6,000 |
| Rice Ranch Oil Co., Orcutt | Santa Maria Field | Absp. | 2,500 |
| Rio Grande Oil Co., 417 S. Hill St., Los Angeles | Santa Fe Springs | Absp. | 30,000 |
| Ryan & Hackett Co., Inc., Los Angeles | Interstate Oil Corp., Jones lease, Signal Hill | Absp. | 2,200 |
| Shanley Gasoline Co., Inc., 3000 Walnut Ave., Long Beach | Long Beach Field | Absp. | 3,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Puente lease, Coyote Hills Field | Absp. | 24,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Reyes lease, Dominguez Field | Absp. | 15,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Rindge lease, Inglewood Field | Absp. | 6,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Careaga, Santa Maria Field | Absp. | 3,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Gosnell, Long Beach Field | Absp. | 96,000 |
| Shell Oil Co. of California, 200 Bush St., San Francisco | Caseboom, Long Beach Field | Absp. | 112,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Lot 64, American Colony tract, Signal Hill Field | Absp. | 30,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Knob of Naples tract, Alamitos Heights Field | Absp. | 15,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Tract 2,200, Torrance Field | Absp. | 2,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Block F.&G., City of Signal Hill, Signal Hill Field | Absp. | 15,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | W½, Blk. 78, American Colony tract, Signal Hill Field | Absp. | 11,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | SW, Blk. 58, American Colony tract, Signal Hill Field | Absp. | 35,000 |
| Signal Hill Gasoline Co., Box 446, Fellows | Sec. 3-31s-24e, Elk Hills Field | Absp. | 5,000 |
| Signal Hill Gasoline Co., Box 446, Fellows | Sec. 32-12n-23w, Midway-Sunset Field | Absp. | 3,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Rincon Field | Absp. | 15,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Blk. 712, Wesley Park tract, Huntington BeachField | Absp. | 15,000 |
| Signal Hill Gasoline Co., Box 7, Long Beach | Sec. 10-5s-12w, Seal Beach Field | Absp. | 36,000 |
| Signal Hill Gasoline Co., Box 446, Fellows | Sec. 36-12n-24w, Midway-Sunset Field | Absp. | 2,000 |
| Signal Oil & Gas Co., 505 Roosevelt Bldg., Los Angeles | Signal Hill | Absp. | 20,000 |
| Signal Oil & Gas Co., 505 Roosevelt Bldg., Los Angeles | Signal Hill | Absp. | 30,000 |
| Signal Oil & Gas Co., 505 Roosevelt Bldg., Los Angeles | Signal Hill | Absp. | 15,000 |
| Signal Oil & Gas Co., 505 Roosevelt Bldg., Los Angeles | Signal Hill | Absp. | 15,000 |
| Signal Oil & Gas Co., 505 Roosevelt Bldg., Los Angeles | Signal Hill | Absp. | 35,000 |
| Signal Oil & Gas Co., Box 405, Maricopa | Maricopa Flats | Absp. | 7,500 |
| Southwestern Engineering Corp. | Huntington Beach | Absp. | 2,500 |
| Southwest Refining Co., Box 2062, Long Beach | Spring and Walnut, Long Beach | Absp. | 5,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Santa Fe Springs | C-A | *5,497 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Santa Fe Springs | C-A | 16,600 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Santa Fe Springs | C-A | 17,400 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Montebello | C-A | 10,176 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Murphy-Coyote | C-A | 10,870 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Kraemer | C-A | 8,919 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Brea | C-A | 2,282 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 6,810 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 5,720 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 23,200 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 9,666 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 6,918 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Huntington Beach | C-A | 8,550 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Seal Beach | C-A | 25,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Seal Beach | C-A | 8,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Long Beach | C-A | 5,395 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Long Beach | Absp. | 24,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Long Beach | C-A | 12,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Dominguez | C-A | 2,785 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Athens | C-A | 1,670 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Inglewood | C-A | 6,900 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Inglewood | C-A | 21,409 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Torrance | C-A | 9,325 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Whittier | C-A | 627 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Cypress | Absp. | 6,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Ventura | C-A | 12,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Ventura | C-A | 32,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Ventura | C-A | 32,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Newhall | C-A | 226 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 10,200 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 11,550 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | Absp. | 30,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 3,500 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 4,500 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 5,500 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 5,800 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Taft | C-A | 4,750 |

(Continued on Page 194)

"TOLEDO"
TRADE-MARK REGISTERED

PIPE THREADERS
POWER MACHINES
POWER DRIVES
PIPE REAMERS
PIPE CUTTERS
WORK BENCHES
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VISE MOUNTS

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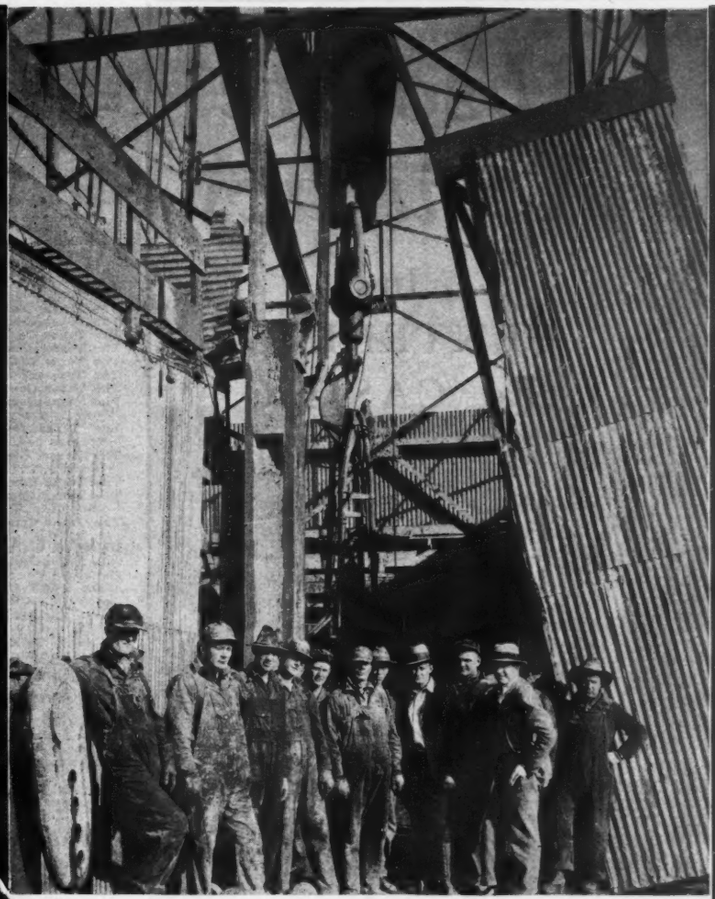
NEW YORK OFFICE, 72 LAFAYETTE ST.

# Among the Men Active in the Different Fields

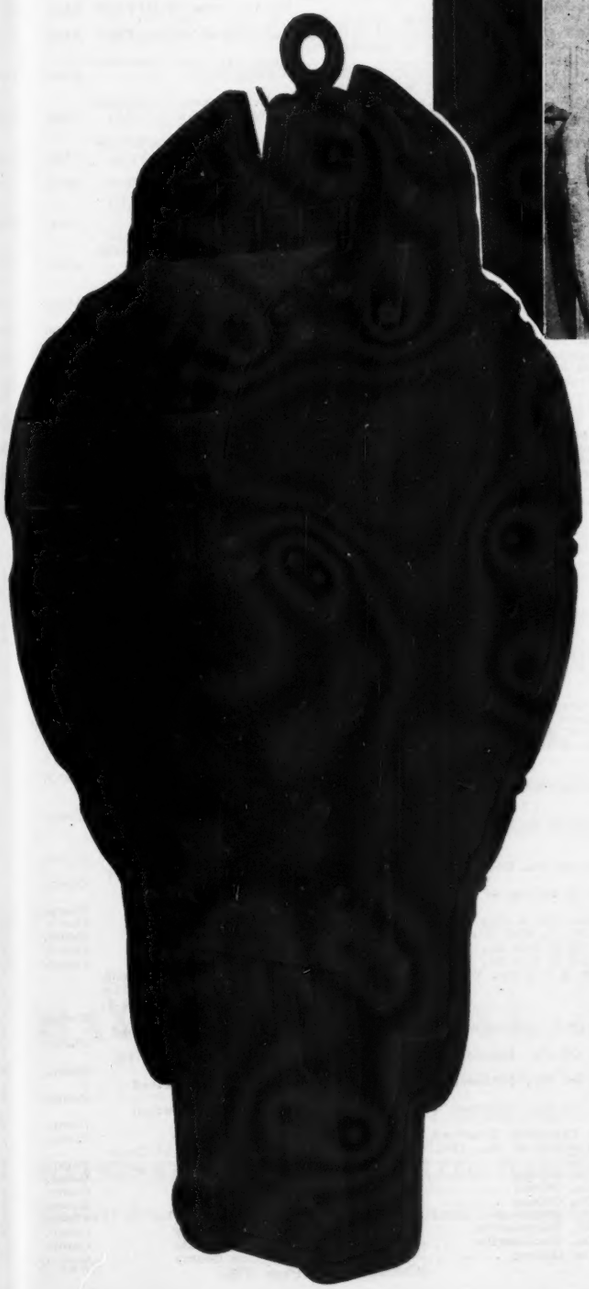
(1) Operators of one of the largest gas-driven compressor stations in the world, Sterlington, La.; first row, seated: J. E. Wolf, machinist; F. M. Franklin, oiler; W. M. Thompson, oiler; R. A. Berryhill, oiler, and L. M. Davis oiler; standing: Ted Gutting, oiler; W. J. West, oiler; T. A. Gunden, oiler; C. L. King, oiler; Claude Dunham, chief engineer; T. L. Milford, third engineer; L. F. Hughes, first engineer, and G. D. Dalton, second engineer. Nos. 2, 3 and 4, left to right: R. A. Baum, engineer; J. H. Young, chief engineer; and A. G. Hoog, consulting engineer, Mississippi River Fuel Co. (5) Charles E. Myler, vice president of the Muskegon Oil Corp. (6) Left to right: Front row, C. E. Zahn, engineer, National Supply Co.; Edward W. Bradley, engineer, C. F. Camp Co.; A. Bolzer, Prescott Pump Co.; R. E. Shepperd, C. F. Camp Co.; back row: E. E. Robbins, C. F. Camp Co.; and A. V. R. Chandler, chief engineer, National Supply Co. (7) Stanley Daniloff, Bulgarian tailor, who organized and is president of the Muskegon Oil Corp.—pioneer who opened the Muskegon Field in December, 1927.

# OKLAHOMA CITY .... ANOTHER REGAN FIELD

REGAN



CROWN & TRAVELING BLOCKS



*Mid-Kansas Oil & Gas Co., Trosper well No. A2, Oklahoma City. Depth 6235 feet. Drilling crews of the H. L. Blackstone Drilling Co. Left to right: Clarence Jones, derrick man; Geo. Smith, Joe Harrington, T. E. Risley, L. C. Marshall, R. J. Fish, J. R. Baker, farm boss; Jack Jackson, driller; Joe Johnson, driller; W. A. Pitts, Regan Sales Co. representative; Clarence Davis, roughneck; Paul Histler, roughneck.*

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More Regan Crown & Traveling Blocks are in service in the Oklahoma City field than any other types. Operators in this field, recognizing the need for blocks of great weight, rigid construction and designed to carry the heaviest loads, selected Regan Blocks. Count the Regans in Oklahoma City—or in any other active rotary field. They *predominate!*

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The Makesure Cement Barrel is a simple and effective device which should be used on every cementing job. It provides the easiest and simplest method of insuring perfect distribution of the cement around casing and a perfect water shut-off — dependable under all conditions of service. Write for complete information and new price list.

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Runs any size tubing with ease and safety and is preeminently adapted to handle long, heavy strings with added surety. Equipped with a simple automatic device which effectively stops falling tubing. One man handles it with ease, using one hand only. This Lorraine quality product has been thoroughly field-tried and proved, and is now used by many of the large oil companies. Complete information upon request.

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Tulsa, Oklahoma

*Export Distributors:*
American Steel & Export Co., Inc.
535 Fifth Ave., New York


## NATURAL GASOLINE PLANTS BY STATES

### CALIFORNIA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (Gals.) |
|---|---|---|---|
| Standard Gasoline Co., 225 Bush St., San Francisco | Wheeler Ridge | C-A | 1,000 |
| Standard Gasoline Co., 225 Bush St., San Francisco | Kettleman Hills | Absp. | 100,000 |
| State Gasoline Corp., R.F.D. 1, Box 240, Long Beach | Colorado and Ultimo Sts. | Absp. | 22,500 |
| State Gasoline Corp., R.F.D. 1, Box 240, Long Beach | Twenty-seventh and St. Louis Sts. | Absp. | 12,500 |
| State Gasoline Corp., R.F.D. 1, Box 240, Long Beach | Columbia and Elm Sts. | Absp. | 25,000 |
| State Gasoline Corp., R.F.D. 1, Box 240, Long Beach | Pine and Thirty-first Sts. | Absp. | 32,500 |
| St. Helens Petroleum Co., Ltd., Box M, Taft | Sec. 16-32-24, M.D.B.&M. | Absp. | 2,000 |
| St. Helens Petroleum Co., Ltd., R. R. 1, Box 14, Placentia | Sec. 18-3-9, S.B.B.&M. | Absp. | 300 |
| St. Helens Petroleum Co., Ltd., Box 248, Montebello | Sec. 2-12-12, S.B.B.&M. | Absp. | 500 |
| Superior Oil Co. | Joughin lease | Absp. | 2,400 |
| The Texas Company (California), Signal Hill | Los Angeles County | Absp. | 14,000 |
| The Texas Company (California), Signal Hill | Los Angeles County | Absp. | 26,000 |
| The Texas Company (California), Signal Hill | Los Angeles County | Absp. | 17,000 |
| The Texas Company (California), Athens | Los Angeles County | Absp. | 12,000 |
| The Texas Company (California), Signal Hill | Los Angeles County | Absp. | 61,825 |
| The Texas Company (California), Long Beach | Los Angeles County | Absp. | 17,000 |
| The Texas Company (California), Signal Hill | Los Angeles County | Absp. | 12,000 |
| The Texas Company (California), Coalinga | Kettleman Hills, Kings County | Absp. | 40,000 |
| The Texas Company (California), Santa Fe Springs | Los Angeles County | Absp. | 54,700 |
| The Texas Company (California), Huntington Beach | Los Angeles County | Absp. | 20,000 |
| The Texas Company (California), Montebello | Los Angeles County | Absp. | 2,500 |
| The Texas Company (California), South Mountain | Ventura County | Comp. | 12,000 |
| The Texas Company (California), Fillmore | Shields lease, Ventura County | Absp. | 3,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Newlove lease, Orcutt Field | Absp. | 24,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Tarrey lease, Ventura Field | Absp. | 500 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Rosecrans lease, Rosecrans Field | Absp. | 34,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Hellman lease, Dominguez Field | Absp. | 45,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Bell lease, Santa Fe Springs Field | Absp. | 150,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Stearns lease, Brea Field | Absp. | 24,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Morse lease, Richfield Field | Absp. | 23,000 |
| Union Oil Co. of California, 617 W. Seventh St., Los Angeles | Copeland lease, Huntington Beach Field | Absp. | 10,000 |
| Universal Consolidated Oil Co. | Town of Santa Paula, Ventura | Absp. | 500 |
| West Coast Refining Co., Pacific Finance Bldg., Los Angeles | Fee property, Lost Hills Field | Absp. | 2,000 |
| West Coast Refining Co., Pacific Finance Bldg., Los Angeles | Richfield | Absp. | 50,000 |
| Western Gasoline Corp. | Olinda | Absp. | 10,000 |
| Western Natural Gasoline, Commercial Exchange Bldg., Los Angeles | Kellyville | Absp. | 3,000 |
| Western States Gasoline Corp., 609 S. Grand, Los Angeles | Signal Hill | C-A | 10,000 |
| Wilshire Oil Co., Inc., Los Angeles | Kettleman Hills | Absp. | 100,000 |
| Wilshire Oil Co., Inc., Los Angeles | Santa Fe Springs | Absp. | 50,000 |
| | Santa Fe Springs | Absp. | 75,000 |

*Capacities of all Standard Gasoline Co. plants are in M. cubic feet.

### COLORADO

| | | | |
|---|---|---|---|
| Continental Oil Co., Ponca City, Okla. | NE, Sec. 6-9n-68w, 7½ miles W of Wellington | Absp. | 3,000 |
| Continental Oil Co., Ponca City, Okla. | NW, Sec. 30-8n-68w, 15 miles north of Fort Collins | Absp. | 600 |

### ILLINOIS

| | | | |
|---|---|---|---|
| American Oil Development Co., Oblong | Oblong | Comp | 200 |
| American Oil Development Co., Porterville | Porterville | Comp. | 225 |
| American Oil Development Co., Hardinsville | Hardinsville | Comp. | 60 |
| Arkansas Fuel Oil Co., Robinson | Robinson | Comp. | 1,500 |
| Associated Producers Co., 11 Broadway, New York | Crawford County | Comp. | 1,300 |
| Bell Brothers, Robinson | Crawford County | Comp. | 130 |
| Bell Brothers, Robinson | Cumberland County | Comp. | 150 |
| Big Four Oil & Gas Co., Pittsburgh, Pa. | Lawrence County (3) | Comp. | 1,800 |
| Brenneman & MacDonell, 312 S. Cole St., Lima, Ohio | NE NE, Sec. 7-7-13, Crawford County | Comp. | 1,000 |
| Brenneman & MacDonell, 312 S. Cole St., Lima, Ohio | NW NW, Sec. 6-6-13, Crawford County | Comp. | 250 |
| Bruner, A., & Co., 312 Wright Bldg., Tulsa, Okla. | NE, Sec. 36-3-12, Lawrence County | Comp. | 200 |
| Cheuvront Oil Co., Oblong | Sec. 25-7-13, Crawford County | Comp. | 30 |
| Cheuvront & Stranahan Oil Co., Oblong | Sec. 22-6-13, Crawford County | Comp. | 30 |
| International Oil & Gas Co., Washington, Pa. | Crawford County | Comp. | 2,000 |
| Kennedy, W. C., Co., Bradford, Pa. | Crawford County (4) | Comp. | 400 |
| Kewanee Oil & Gas Co., Robinson | Crawford County (3) | Comp. | 1,500 |
| Kewanee Oil & Gas Co., Robinson | Lawrence County (2) | Comp. | 1,000 |
| Liberty Oil & Gas Co., Warren, Pa. | L. F. Houghton lease 1009, W½ SW, Sec. 33-7-13w and NW NW, Sec. 4-6-13w | Comp. | 50 |
| Lord, Henry C., Robinson | Sec. 18-6n-13w, Crawford County | Comp | 50 |
| Mahutska Oil Co., Robinson | Bond farm, Sec. 10-6-13, Crawford County | Comp. | 1,000 |
| Mahutska Oil Co., Robinson | Sec. 17-7-13, Crawford County | Comp. | 300 |
| Mahutska Oil Co., Robinson | Sec. 30-7-13, Crawford County | Comp. | 700 |
| Mallory & Crawford, Bradford, Pa. | Crawford County | Comp. | 35 |
| Nolan & Lamberton, Box 1328, Tulsa, Okla. | NE SW, Sec. 12-7-14, Crawford County | Comp. | 200 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 405 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 242 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 310 |
| Ohio Oil Co., Robinson | Crawford County | Comp. | 243 |
| Ohio Oil Co., Hardinsville | Crawford County | Comp. | 756 |
| Ohio Oil Co., Hardinsville | Crawford County | Comp. | 100 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 342 |

(Continued on Page 196)

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# NATURAL GASOLINE PLANTS BY STATES

## ILLINOIS (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Ohio Oil Co., Stoy | Crawford County | Comp. | 310 |
| Ohio Oil Co., Stoy | Crawford County | Comp. | 833 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 200 |
| Ohio Oil Co., Oblong | Crawford County | Comp. | 1,130 |
| Ohio Oil Co., Lawrenceville | Lawrence County | Comp. | 270 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,170 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 570 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 570 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,800 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,190 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 990 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,000 |
| Ohio Oil Co., Lawrenceville | Lawrence County | Comp. | 500 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,050 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,050 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 350 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 390 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,400 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,500 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,500 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 390 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,200 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 375 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 1,140 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 770 |
| Ohio Oil Co., Bridgeport | Lawrence County | Comp. | 450 |
| Ohio Oil Co., Casey | Clark County | Comp. | 124 |
| Ohio Oil Co., Casey | Clark County | Comp. | 241 |
| Ohio Oil Co., Casey | Cumberland County | Comp. | 1,150 |
| Ohio Oil Co., Casey | Cumberland County | Comp. | 437 |
| Rogers, R. G., Oil Co. | Sec. 11-7-14w, Crawford County | Comp. | 60 |
| Snowden & McSweeney Co., Bridgeport | E½ SE, Sec. 17-3-12w | Topping | 1,000 |
| Southern Oil Co., Pittsburgh, Pa. | Casey | Comp. | 135 |
| Splane, W. W., Oil City, Pa. | Robinson | Comp. | 300 |
| Stranahan & Cheuvront, Oblong | Sec. 11-7-14, Crawford County | Comp. | 30 |
| Union Gasoline Co., Caney | NW NW, Sec. 29-29-13, Washington County | Absp. | 5,000 |
| Vacuum Gasoline Co., Lawrenceville | Lawrence County | Comp. | 3,000 |
| Vincennes Oil & Gas Co., Vincennes, Ind. | Lawrence County | Comp. | 5,000 |
| Warner-Caldwell Oil Co., Titusville, Pa. | Oblong | Comp. | 250 |

## KANSAS

| | | | |
|---|---|---|---|
| Altitude Petroleum Corp., Kennedy Bldg., Tulsa, Okla. | Medicine Lodge | Absp. | 5,000 |
| Barnsdall Oil Co., R.R. 2, Box 173, Oxford | W½ NW, Sec. 20-33-3 | Absp. | 12,000 |
| Denman Brothers, Sedan | Sedan | Comp. | 100 |
| Empire Oil & Refining Co., Madison | NE, Sec. 14-22-11, Greenwood County | Comp. | 4,000 |
| Empire Oil & Refining Co., R.F.D., Hamilton | SW, Sec. 16-23-9, Greenwood County | Absp. | 10,000 |
| Empire Oil & Refining Co., Eureka | SE, Sec. 29-23-10, Greenwood County | Comp. | 7,500 |
| Empire Oil & Refining Co., R.F.D., Hamilton | SW, Sec. 2-23-9, Greenwood County | Absp. | 3,000 |
| Empire Oil & Refining Co., Madison | NW, Sec. 8-23-11, Greenwood County | Absp. | 8,000 |
| Empire Oil & Refining Co., Sallyards | SE, Sec. 9-26-8, Butler County | Absp. | 5,000 |
| Empire Oil & Refining Co., Caney | SW, Sec. 13-35-13, Montgomery County | Absp. | 10,000 |
| Empire Oil & Refining Co., Wichita | NW, Sec. 17-28-1, Sedgwick County | Absp. | 40,000 |
| Empire Oil & Refining Co., Wellington | SW, Sec. 17-32-1, Sumner County | Absp. | 12,000 |
| Empire Oil & Refining Co., Arkansas City | SE, Sec. 13-34-3, Cowley County | Absp. | 15,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa, Okla. | E½, Sec. 10-23-9, Greenwood County | Absp. | 10,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa, Okla. | NE NW, Sec. 12-22-10, Greenwood County | Comp. | 5,000 |
| Kansas Gasoline Co., Box 1007, Winfield | W½ NW, Sec. 24-32s-4e, Cowley County, 2 miles east of Winfield | Absp. | 5,000 |
| McPherson Oil & Gas Development Co., United Life Bldg., Salina Kans. | SW, Sec. 29-18-2w, McPherson County | Absp. | 10,000 |
| McPherson Oil & Gas Development Co., United Life Bldg., Salina Kans. | NE, Sec. 13-32-12w, Barber County | C-A | 12,000 |
| Pen Gasoline Co., Sedan | 2 miles E of Sedan | Comp. | 1,800 |
| Shell Petroleum Corp., Oxford | SE, Sec. 25-31s-2e | Absp. | 5,000 |
| Sinclair Oil & Gas Co., Box E, Kenbro | SW, Sec. 20-22-10 | Comp. | 7,000 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 31-30n-6e, Cowley County | Absp. | 12,400 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 28-26n-5e, Butler County | Absp. | 6,000 |
| Washington Development Co., Wellington | Sec. 14-32s-3w, Sumner County | Absp. | 15,000 |

## KENTUCKY

| | | | |
|---|---|---|---|
| Coast Oil Co., Monticello | Monticello | Comp. | 200 |
| Heck, W. B., Box 164, Owensboro | Monticello | Comp. | 250 |
| Kentucky Pipe Line Co., 311 W. Chestnut St., Louisville | Clark County | Char. | 2,600 |
| Petroleum Exploration Co., Trico Bldg., Sistersville, W. Va. | Leeco | Comp. | 500 |
| Superior Oil Corp., Wright Bldg., Tulsa, Okla. | Tarrent | Absp. | 5,000 |
| Swiss Oil Corp., Lexington | Fixer | Absp. | 2,000 |
| Virginian Gasoline & Oil Co., Kermit, W. Va. | Martin County | Absp. | 10,000 |
| Virginian Gasoline & Oil Co., Cattletsburg | Boyd Co. | Absp. | 24,000 |

## LOUISIANA

| | | | |
|---|---|---|---|
| Arkansas Fuel Oil Co., Homer | Homer | Comp. | 5,000 |
| Arkansas Fuel Oil Co., Oil City | Oil City | Comp. | 1,000 |
| Arkansas Natural Gas Corp., Monroe | Monroe | Absp. | 10,000 |
| Carson Carbon Co., Collinston | NW, Sec. 28-20-8e, Morehouse Parish | Absp. | 500 |
| Coltexo Corp., Hammock | Ouachita Parish | Absp. | 8,000 |
| Columbian Gasoline Corp., Fairbanks | S portion, Sec. 37-19n-4e, Ouachita Parish | Absp. | 16,000 |
| Columbian Gasoline Corp., Fowler | SW, Sec. 2-19n-4e, Ouachita Parish | Absp. | 6,000 |
| Columbian Gasoline Corp., Swartz | E½, Sec. 5-18n-5e, Ouachita Parish | Absp. | 16,000 |
| Columbian Gasoline Corp., Spyker | Sec. 37-20n-5e, Morehouse Parish | Absp. | 8,000 |
| Columbian Gasoline Corp., Alto | N½ SW, Sec. 10-16n-6e, Richland Parish | Absp. | 16,000 |
| Columbian Gasoline Corp., Perryville | NW, Sec. 19-20n-5e, Morehouse Parish | Absp. | 4,000 |
| Columbian Gasoline Corp., Monroe | Secs. 28 and 33-19n-5e, Ouachita Parish | Absp. | 10,000 |
| De Soto Gasoline Co., Box 179, Houston, Tex. | Sec. 36-13-12, De Soto Parish | Comp. | 900 |
| Dixie Oil Co., Inc., Tulsa, Okla. | Sec. 14-21n-15w, Caddo Parish | C-A | 10,000 |
| Gulf Refining Co. of Louisiana, Box 1731, Shreveport | Mooringsport | Comp. | 3,000 |

## LOUISIANA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Gulf Refining Co. of Louisiana, Box 1731, Shreveport | Homer | C-A | 2,500 |
| Herkness, J. Smylie, Bastrop | Sec. 18-20n-5e, Morehouse Parish | Absp. | 1,500 |
| Huber, J. M., Co. of Louisiana, Inc., Swartz | Sec. 5-18n-5e | Absp. | 4,000 |
| Louisiana Oil Refining Corp., Box 216, Shreveport | Cotton Valley | Absp. | 40,000 |
| Magnolia Petroleum Co., Harmon | Sec. 12-12n-11w, Red River Parish | Comp. | 16,000 |
| Magnolia Petroleum Co., Cotton Valley | Sec. 21-21-10, Webster Parish | Comp. | 8,500 |
| Magnolia Petroleum Co., Gilliam | Sec. 24-21-15, Caddo Parish | Absp. | 2,500 |
| Monroe Louisiana Carbon Co., Monroe | Sec. 28-33-19n-5e, Ouachita Parish | Char. | 2,000 |
| Ohio Oil Co., Haynesville | Claiborne Parish | Absp. | 9,400 |
| Ohio Oil Co., Treat | Webster Parish | Absp. | 10,000 |
| Pala Oil Co., Shreveport | Sec. 20-20-15 (Fishing Club) | Comp. | 300 |
| Palmer Corp. of Louisiana, 1100 City Bank Bldg., Shreveport | Sec. 1-22n-11w, near Cotton Valley | Absp. | 25,000 |
| Palmer Corp. of Louisiana, 1100 City Bank Bldg., Shreveport | Sec. 32-19n-5e, Swartz | Absp. | 5,000 |
| Phillips Petroleum Co., Homer | W½ SW, Sec. 19-21-7, Claiborne Parish | Comp. | 10,500 |
| Reserve Petroleum Co., Box 172, Haynesville | Sec. 15-23-8, Claiborne Parish | Absp. | 6,000 |
| Reserve Petroleum Co., Box 696, Homer | Sec. 30-21-7, Claiborne Parish | Comp. | 5,000 |
| Southwestern Gas & Electric Co., Oil City | Oil City | Comp. | 450 |
| Standard Oil Co. of Louisiana, Trees | Caddo Field, near Trees | Absp. | 7,000 |
| Standard Oil Co. of Louisiana, Homer | Claiborne Field, near Homer | Absp. | 6,500 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 3-20n-16w, Caddo Parish | Comp. | 4,000 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 23-21n-15w, Caddo Parish | Absp. | 18,800 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 19-20n-15w, Caddo Parish | Comp. | 600 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 34-13n-12w, De Soto Parish | Comp. | 4,000 |
| Union Gas Products, Inc., 710 Ouachita Bank Bldg., Monroe | Near Swartz | C-A | 6,000 |
| United Carbon Co., Monroe | SW SW, Sec. 10-16n-6e, Richland Parish | Absp. | 10,000 |
| United Carbon Co., Monroe | NW NE, Sec. 24-21n-6e, Richland Parish | Char. | 3,500 |
| United Carbon Co., Monroe | NW NE, Sec. 17-20n-5e, Richland Parish | Char. | 3,500 |
| United Carbon Co., Monroe | SW NE, Sec. 5-18n-5e, Ouachita Parish | Absp. | 5,000 |

## NEW MEXICO

| | | | |
|---|---|---|---|
| Phillips Petroleum Co., Artesia | SW NW, Sec. 16-18-28, Eddy County | Absp. | 9,000 |

## NEW YORK

| | | | |
|---|---|---|---|
| Empire Gas & Fuel Co., Ltd., Andover | Sec. 54, Andover | Absp. | 200 |
| Nathan Nichols | 1 mile east of Richburg | Comp. | 600 |
| Wirt Gasoline Co., Bradford, Pa. | Allegany County | Comp. | 500 |

## OHIO

| | | | |
|---|---|---|---|
| American Oil Development Co., Fly | Fly | Comp. | 350 |
| American Oil Development Co., New Matamoras | New Matamoras | Comp. | 175 |
| East Ohio Producing & Refining Co., 1405 E. Sixth St., Cleveland | 5 miles south of Doylestown, Chippewa Twp., Wayne County | Absp. | 6,000 |
| Hope Construction & Refining Co., Fly | Fly | Comp. | 300 |
| Hope Construction & Refining Co., New Matamoras | New Matamoras | Absp. | 1,200 |
| Hope Construction & Refining Co., New Matamoras | New Matamoras | Comp. | 200 |
| Jefferson Gasoline Co., R. R. 1, Ryland | Sec. 27, Wells Township | Comp. | 100 |
| Muskingum Oil Co., Sistersville, W. Va. | Perry Twp., Monroe County | Comp. | 100 |
| Norris, Mrs. Jennie, Parkersburg, W. Va. | Sec. 11, Newport Twp., Washington County | Comp. | 100 |
| Preston Oil Co., 99 N. Front St., Columbus | R.F.D. 1, Racine | Absp. | 1,500 |
| Preston Oil Co., 99 N. Front St., Columbus | New Straitsville | Absp. | 1,500 |
| Preston Oil Co., 99 N. Front St., Columbus | Sugar Grove | Absp. | 10,000 |
| Preston Oil Co., 99 N. Front St., Columbus | Homer | Absp. | 18,000 |
| Preston Oil Co., 99 N. Front St., Columbus | Pavonia | Absp. | 15,000 |
| Preston Oil Co., 99 N. Front St., Columbus | Medina | Absp. | 3,500 |
| Preston Oil Co., 99 N. Front St., Columbus | R.F.D. 7, Zanesville | Absp. | 3,000 |
| Pure Oil Co., Sistersville, W. Va. | Ramsey heirs farm, Washington County | Comp. | 100 |
| Pure Oil Co., Sistersville, W. Va. | Eckart heirs farm, Washington County | Comp. | 50 |
| Reno Oil Co., Sistersville, W. Va. | Monroe County | Comp. | 150 |
| River Gas Co. | New Matamoras | Absp. | 125 |
| Southern Oil Co., Schley | Washington County | Comp. | 150 |
| Southern Oil Co., Sycamore Valley | Monroe County | Comp. | 50 |
| Tuel & Thoenen | Fly | Comp. | 450 |
| Tuel & Thoenen | New Matamoras | Comp. | 300 |
| Turner, J. E., & Co. | 5 miles fromToronto | Comp. | 150 |
| Tyler Oil Co., Sistersville, W. Va. | Monroe County | Comp. | 37 |
| Washington Development Co., Mount Vernon | Mount Vernon | Absp. | 1,000 |
| Wiser Oil Co., Sistersville, W. Va. | Lodi | Comp. | 50 |

## OKLAHOMA

| | | | |
|---|---|---|---|
| Akin Gasoline Co., Box 1402, Tulsa | Dewey | Comp. | 1,000 |
| Akin Gasoline Co., Box 1402, Tulsa | Bixby | Comp. | 1,000 |
| Amerada Petroleum Corp., Box 299, Ardmore | Sec. 20-5s-1e, Carter County | Absp. | 1,500 |
| Amerada Petroleum Corp., Box 68, Healdton | Sec. 21-2s-2w, Carter County | Absp. | 7,000 |
| Amerada Petroleum Corp., Box 1028, Okmulgee | Sec. 13-12n-11e, Okfuskee County | Absp. | 2,500 |
| Amerada Petroleum Corp., Box 596, Earlsboro | Sec. 16-9-5, Pottawatomie County | Absp. | 15,000 |
| Amerada Petroleum Corp., Box 231, Bowlegs | Sec. 15-8-6, Seminole | Absp. | 3,000 |
| Amerada Petroleum Corp., Harjo | Sec. 7-8-5, Pottawatomie | Absp. | 20,000 |
| Amerada Petroleum Corp., Box 1257, Seminole | Sec. 17-9-5, Seminole | Absp. | 10,000 |
| Amerada Petroleum Corp., Oklahoma City | Sec. 30-11-2, Oklahoma | Absp. | 8,000 |
| Arthur Oil Co., Sapulpa | Sapulpa | Comp. | 1,000 |
| Barco Gasoline Co., Wirt | Wirt | Comp. | 2,000 |
| Barnsdall Oil Co., Box 518, Earlsboro | NE NE, Sec. 15-9-5 | Absp. | 30,000 |
| Barnsdall Oil Co., Box 518, Earlsboro | SW SW, Sec. 11-8-5 | Absp. | 20,000 |
| Barnsdall Oil Co., Box 856, Beggs | N half NE, Sec. 6-14-12 | Absp. | 8,000 |
| Barnsdall Oil Co., Box 856, Beggs | W half SW, Sec. 23-14-11 | Comp | 3,000 |
| Barnsdall Oil Co., Box 2033, Tulsa | SE, Sec. 5-20-12 | Absp. | 3,000 |
| Barnsdall Oil Co., Box 224, Avant | NW SE, Sec. 18-23-12 | Absp. | 3,000 |
| Barnsdall Oil Co., Box 228, Osage | SW SW, Sec. 20-21-9 | Absp. | 2,500 |
| Barnsdall Oil Co., Drawer A, Barnsdall | NW NW, Sec. 29-25-11 | Absp. | 3,500 |
| Bartlett Gasoline Co., Box 1402, Tulsa | Butler | Absp. | 10,000 |
| Bell Oil & Gas Co., Tulsa | Mounds | Absp. | 1,500 |
| Bell Oil & Gas Co., Tulsa | Vynona | Absp. | 1,000 |
| Bell Oil & Gas Co., Tulsa | Stone Bluff | Absp. | 1,000 |
| Boynton Gasoline Co., Boynton | Boynton | Comp. | 500 |
| Bradley, E. A., et al, Bixby | 2½ miles from Bixby | Comp. | 20 |
| Bradstreet, J. H., & Co., Muskogee | Muskogee | Comp. | 300 |
| Brady, E. H., Tulsa | Steele Bros. farm, Jenks | Comp. | 250 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 23-4s-2w, Carter County | Absp. | 10,500 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 9-26n-6e, Osage County | Absp. | 22,000 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 3-10n-8e, Seminole County | Absp. | 25,000 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 15-9n-6e, Seminole County | Absp. | 60,000 |

(Continued on Page 199)

## NATURAL GASOLINE PLANTS BY STATES

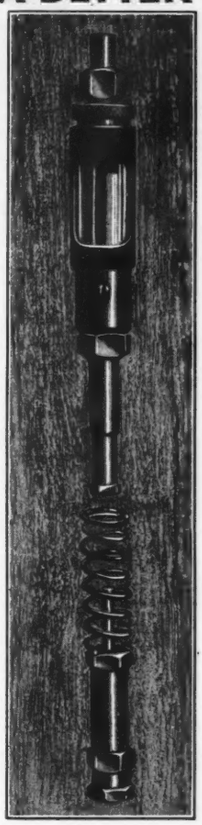
### OKLAHOMA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Carter Oil Co., Box 2045, Tulsa | Sec. 34-10n-6e, Seminole County | Absp. | 52,000 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 14-7n-6e, Seminole County | Absp. | 50,000 |
| Carter Oil Co., Box 2045, Tulsa | Sec. 20-9n-6e, Seminole County | Absp. | 30,000 |
| Chase Gasoline Co., Muskogee | Muskogee | Comp. | 1,000 |
| Chase Gasoline Co., Muskogee | Muskogee | Comp. | 2,000 |
| Chestnut & Smith Corp., 624 S. Cheyenne Ave., Tulsa | Glenpool | Comp. | 4,000 |
| Chestnut & Smith Corp., 624 S. Cheyenne Ave., Tulsa | Glenpool | C-A | 16,000 |
| Chestnut & Smith Corp., 624 S. Cheyenne Ave., Tulsa | Morris | Comp. | 3,500 |
| Comar Gasoline Co., Marland | NE, Sec. 2-24n-1w | Absp. | 20,000 |
| Comar Gasoline Co., Marland | SW, Sec. 28-25n-1w | Absp. | 8,000 |
| Comar Oil Co., Box 278, Braman | NW, Sec. 5-28n-1w | C-A | 1,500 |
| Comar Oil Co., Box 278, Braman | SW, Sec. 21-29n-1w | Absp. | 12,000 |
| Continental Oil Co., Ponca City | SE, Sec. 33-25n-2e, Kay County | Absp. | 8,000 |
| Continental Oil Co., Ponca City | SW, Sec. 1-26n-2w, Kay County | Absp. | 2,000 |
| Continental Oil Co., Ponca City | SW, Sec. 15-25n-2w, Kay County | Absp. | 3,000 |
| Cosden Oil Co., Electric Bldg., Fort Worth, Tex. | Lovell | Absp. | 8,000 |
| Crosbie & Moran, Inc., Box 715, Earlsboro | Sec. 9-9n-5e | Absp. | 10,000 |
| Crosbie & Moran, Inc., Box 715, Earlsboro | Sec. 2-9n-5e | Absp. | 15,000 |
| Crosbie & Moran, Inc., Box 247, Marshall | Sec. 20-19n-4w | Absp. | 5,000 |
| Crosbie & Moran, Inc., Box 1724, Konawa | Sec. 8-6n-6e | Absp. | 10,000 |
| Crosbie, Porter & Moran, 402 Thompson Bldg., Tulsa | Sec. 29-12-10 | Absp. | 20,000 |
| DeSoto Gasoline Co., Muskogee | Sec. 5-14-18 | Comp. | 150 |
| Devonian Oil Co., Chickasha | NE, Sec. 32-7n-6w | Absp. | 3,000 |
| Devonian Oil Co., Kellyville | SE, Sec. 22-17n-10e | Absp. | 20,000 |
| Devonian Oil Co., Stroud | NE, Sec. 34-15n-6e | Absp. | 5,000 |
| Dewey Portland Cement Co., Dewey | Dewey | Absp. | 1,500 |
| Eagle-Picher Lead Co., Henryetta | Sec. 6-11-13 | Absp. | 2,500 |
| Empire Oil & Refining Co., Tallant | SE, Sec. 35-25-10, Osage County | Absp. | 35,000 |
| Empire Oil & Refining Co., Weeletka | NW, Sec. 16-11-11, Okfuskee County | Absp. | 7,500 |
| Empire Oil & Refining Co., Seminole | SE, Sec. 24-9-6, Seminole County | Absp. | 25,000 |
| Empire Oil & Refining Co., Seminole | NE, Sec. 34-9-6, Seminole County | Absp. | 20,000 |
| Empire Oil & Refining Co., Lima | SW, Sec. 14-8-6, Seminole County | C-A | 30,000 |
| Empire Oil & Refining Co., Seminole | NE, Sec. 11-8-5, Seminole County | C-A | 25,000 |
| Empire Oil & Refining Co., Konawa | Sec. 9-6-6, Seminole County | Absp. | 14,000 |
| Foster & Norwood Oil Co., Bartlesville | Sec. 29-25-11, Osage County | Absp. | 3,000 |
| Gas Products Co., 402 Thompson Bldg., Tulsa | Sec. 1-8-8 | Comp. | 2,000 |
| Gillespie & Moran, Inc., Box 84, Pearson | Sec. 15-7-4, Pottawatomie County, ½ mile north of St. Louis | Absp. | 28,000 |
| Gilmore, Forrest E., Box 447, Sasakwa | SW NW, Sec. 13-5n-7e | Comp. | 4,000 |
| Gilmore, Forrest E., Box 1105, Sapulpa | SW SE, Sec. 1-7n-10e | Absp. | 800 |
| Gilmore, Forrest E., Box 253, Lima | NE NW, Sec. 23-8n-6e | Comp. | 12,000 |
| Gilmore, Forrest E., Box 253, Lima | SE SE, Sec. 35-8n-6e | Absp. | 25,000 |
| Gilmore, Forrest E., Box 417, Weeletka | NW NW, Sec. 30-11n-1e | Comp. | 8,000 |
| Gilmore, Forrest E., Box 426, Allen | SW SW, Sec. 17-5n-8e | Absp. | 10,000 |
| Gilmore, Forrest E., Ripley | SW SW, Sec. 32-18n-4e | Absp. | 8,000 |
| Gilmore, Forrest E., Box 466, Blackwell | SE, Sec. 15-27n-1w | Absp. | 5,000 |
| Gilmore, Forrest E., Box 16, Hazel | NE NW, Sec. 30-7n-5e | Absp. | 15,000 |
| Gilmore, Forrest E., Box 91, Snomac | NE SE, Sec. 15-7n-6 | Absp. | 12,000 |
| Glomar Gasoline Co., Jennings | Jennings | Absp. | 2,500 |
| Glomar Gasoline Co., Oakhurst | Oakhurst | Absp. | 1,800 |
| Grimes Gasoline Co., Box 322, Tulsa | Sec. 35-11-9 | Absp. | 5,000 |
| Grimes Gasoline Co., Box 322, Tulsa | Sec. 2-10-9 | Comp. | 2,500 |
| Grimes Gasoline Co., Box 322, Tulsa | Sec. 6-19-10 | Absp. | 1,500 |
| Grimes, Charles W., and Otha H., Box 322, Tulsa | Sec. 22-10-11 | Absp. | 7,000 |
| Grimes, Otha H., and Philo W., Box 322, Tulsa | Sec. 11-10-11 | Comp. | 2,000 |
| Grimes, Charles W., and Park T., Box 322, Tulsa | Sec. 35-20-9 | Comp. | 1,000 |
| Grimes, Otha H., and Roy O. Neal, Drumright | Sec. 17-17-7, Creek County | Absp. | 3,000 |
| Grimes & Gillespie, Tulsa | Sperry | Absp. | 1,000 |
| Gypsy Oil Co., Box 2044, Tulsa | N half SW, Sec. 16-17-12 Creek County | Comp. | 23,600 |
| Gypsy Oil Co., Box 2044, Tulsa | E half NE, Sec. 5-17-7, Creek County | Comp. | 4,500 |
| Gypsy Oil Co., Box 2044, Tulsa | NE SW, Sec. 10-16-7, Creek County | Comp. | 2,900 |
| Gypsy Oil Co., Box 2044, Tulsa | SE, Sec. 1-21-7, Osage County | Comp. | 3,300 |
| Gypsy Oil Co., Box 2044, Tulsa | SW, Sec. 32-27-6, Osage County | Absp. | 18,000 |
| Gypsy Oil Co., Box 2044, Tulsa | NW, Sec. 2-24-1w, Noble County | Absp. | 5,800 |
| Gypsy Oil Co., Box 2044, Tulsa | SE cor. NE, Sec. 3-14n-8e, Creek County | Absp. | 2,600 |
| Gypsy Oil Co., Box 2044, Tulsa | NW, Sec. 11-14n-5e, Lincoln County | Absp. | 2,500 |
| Gypsy Oil Co., Box 2044, Tulsa | SE SW, Sec. 14-7n-6e, Seminole County | Absp. | 23,300 |
| Gypsy Oil Co., Box 2044, Tulsa | SE NW, Sec. 7-8-6, Seminole County | Absp. | 19,000 |
| Hales & Cassidy, Cushing | Cochran farm, Sec. 30-18 5, 1 mile north and 2 miles west of Cushing | Absp. | 1,000 |
| Harland Oil Co., Wolco | SW, Sec. 20-25-11 | Absp. | 1,300 |
| Harland Oil Co., Wolco | NE, Sec. 25-24-11 | Absp. | 1,200 |
| Highway Oil Refining Corp., Tulsa | Sec. 20-19n-12e | Comp. | 500 |
| Highway Oil Refining Corp., Haskell | Sec. 21-16n-15e | Comp. | 500 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | NW, Sec. 23-7-6, Seminole County | Comp. | 40,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | NE NW, Sec. 7-8-6, Seminole County | Comp. | 6,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | NW, Sec. 29-14-10, Creek County | Comp. | 7,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | SE, Sec. 15-8-7, Seminole County | Absp. | 15,000 |
| Independent Oil & Gas Co., Philtower Bldg., Tulsa | SW NW, Sec. 20-9-6, Seminole County | Comp. | 4,000 |
| Indian Territory Illuminating Oil Co., Bartlesville | Sec. 24-11-3, Oklahoma County | Absp. | 30,000 |
| Indian Territory Illuminating Oil Co., Bartlesville | Sec. 19-11-2, Oklahoma County | Absp. | 30,000 |
| Indian Territory Illuminating Oil Co., Bartlesville | Sec. 13-11-3, Oklahoma County | Absp. | 30,000 |
| Indian Territory Illuminating Oil Co., Cromwell-Franklin and Wirt Franklin, Oklahoma City | Sec. 19-11-2, Oklahoma County | Absp. | 25,000 |

(Continued on Page 200)


# McCORD

## A BETTER LUBRICATOR

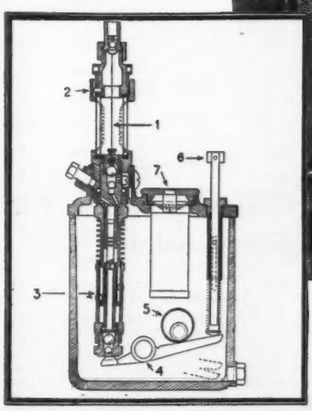


Remove any pump unit with the lubricator in operation

You don't have to shut down the McCord "LF" when removing a pump unit for inspection or cleaning. Simply loosen the one holding screw and remove it—the lubricator will continue to operate.

Needless to say — continuous operation is very desirable in a lubricator, and that's just what the McCord "LF" gives—continuous operation.

The pump unit is the heart of the lubricator—precision built with the positive action of a grease gun, it forces the oil to points of lubrication. The sight feed furnishes absolute proof that oil in the right quantities is being supplied. Undetected leakage in the "LF" is impossible after the oil has passed through the sight feed. The whole pump unit can be removed for inspection or cleaning while the lubricator is working — thus assuring continuous operation.




McCORD

RADIATOR & MFG. CO., DETROIT, MICH.

LUBRICATOR DIVISION

# NATURAL GASOLINE PLANTS BY STATES

## OKLAHOMA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Indian Territory Illuminating Oil Co., Cromwell-Franklin and Wirt Franklin, Oklahoma City | Sec. 12-11-3, Oklahoma County | Absp. | 30,000 |
| Kinnear & Church, Bixby | Bixby | Absp. | 125 |
| Lebow, C. H., Drumright | Sec. 8-17-7 | Absp. | 1,800 |
| Lone Star Gas Co., Hollis | 4 miles NW of Hollis | Absp. | 12,000 |
| McCormick, J. A. | | Absp. | 8,800 |
| McMan Oil & Gas Co., Tonkawa | Tonkawa | Absp. | 8,000 |
| Magnolia Petroleum Co., Cushing | Sec. 7-18-7, Creek County | Absp. | 9,500 |
| Magnolia Petroleum Co., Cushing | Sec. 3-16-7, Creek County | Absp. | 8,500 |
| Magnolia Petroleum Co., Cushing | Sec. 29-18-5, Payne County | Comp. | 1,000 |
| Magnolia Petroleum Co., Davenport | Sec. 34-15-5, Lincoln County | Absp. | 4,900 |
| Magnolia Petroleum Co., Duncan | Sec. 19-1-8, Stephens County | Absp. | 850 |
| Magnolia Petroleum Co., Earlsboro | Sec. 10-9-5, Seminole County | Absp. | 4,750 |
| Magnolia Petroleum Co., St. Louis | Sec. 15-7-4, Pottawatomie County | Absp. | 9,500 |
| Magnolia Petroleum Co., Fox | Sec. 33-1-3, Carter County | Absp. | 2,000 |
| Magnolia Petroleum Co., Graham | Sec. 23-2-3, Carter County | Absp. | 4,700 |
| Magnolia Petroleum Co., Healdton | Sec. 15-4-3, Carter County | Absp. | 3,000 |
| Magnolia Petroleum Co., Wewoka | Sec. 32-8-3, Seminole County | Absp. | 4,500 |
| Magnolia Petroleum Co., Yale | Sec. 6-19-6, Payne County | Absp. | 4,500 |
| Masoneal Gasoline Co., Box 591, Tulsa | Sec. 23-21n-8e, Osage County | Comp. | 1,000 |
| Midco Oil Corp., Tulsa | NW, Sec. 9-18n-7e, Oklahoma County | Comp. | 10,000 |
| Midco Oil Corp., Tulsa | NE, Sec. 5-17n-7e, Oklahoma County | Comp. | 3,000 |
| Midco Oil Corp., Tulsa | SE cor. SE NW, Sec. 27-27n-13e | Comp. | 10,000 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 22-17-7 | Absp. | 12,000 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 5-16-15 | Comp. | 1,600 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 13-22-4w | Absp. | 1,600 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 12-13-13 | Absp. | 1,700 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 15-10-8 | Absp. | 20,000 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 28-17-14 | Comp. | 500 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 17-9-8 | Absp. | 2,000 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 8-15-6 | Absp. | 1,500 |
| Mid-Continent Petroleum Corp., Tulsa | Sec. 28-20-12 | Absp. | 800 |
| Mid-Continent Oil & Gas Co., Shidler | Osage County | C-A | 8,000 |
| Moon Gasoline Co., Box 267, Bixby | Sec. 4-16-13 | Comp. | 1,700 |
| Moon Gasoline Co., Box 40, Muskogee | Sec. 32-17-13 | Comp. | 900 |
| M.T.C. Oil & Gas Co., 818 McBirney Bldg., Tulsa | Sec. 26-18-3, Payne County | Absp. | 4,500 |
| National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa. | Sec. 19-21-8, Pawnee County | Absp. | 2,200 |
| National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa. | Sec. 1-20-7, Pawnee County | Absp. | 1,700 |
| National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa. | Sec. 8-18-7, Creek County | Absp. | 2,200 |
| National Products Co., 1510 Commonwealth Bldg., Pittsburgh, Pa. | Sec. 3-15-10, Creek County | Absp. | 2,200 |
| Neal Gasoline Co., Osage | Sec. 13-21-8, Osage County | Absp. | 3,200 |
| Neal Gasoline Co., Copan | Sec. 34-28-13e, Washington County | Absp. | 950 |
| Oil State Gasoline Co., Jenks | Sec. 17-18-13 | Comp. | 4,500 |
| Oil State Gasoline Co., Yale | Sec. 13-19-5 | C-A | 4,000 |
| Orfic Gasoline Production Co., Tulsa | Cleveland | Comp. | 2,000 |
| Owen Gasoline Co., Barnsdall | Sec. 19-24-11 | Absp. | 3,000 |
| Owen Gasoline Co., Owen | Sec. 29-29-13 | Absp. | 10,000 |
| Paraffin Oil Co., Wann | Wann | Comp. | 100 |
| Peppers Gasoline Co., Enid | SW, Sec. 24-22-4w, Garber Field | Absp. | 3,000 |
| Phillips Petroleum Co., Bartlesville | W half SW, Sec. 32-27-6, Osage County | Absp. | 42,000 |
| Phillips Petroleum Co., Bartlesville | NW SW, Sec. 32-11-2w, Oklahoma County | Absp. | 40,000 |
| Phillips Petroleum Co., Bartlesville | NW SW, Sec. 33-11-8, Seminole County | Absp. | 37,500 |
| Phillips Petroleum Co., Bartlesville | NE NE, Sec. 26-27-5, Osage County | Absp. | 4,500 |
| Phillips Petroleum Co., Bartlesville | SE NW, Sec. 24-11-11, Okfuskee County | Absp. | 17,000 |
| Phillips Petroleum Co., Bartlesville | E half NE, Sec. 16-27-5 Kay County | Absp. | 42,000 |
| Phillips Petroleum Co., Bartlesville | W half NW NW, Sec. 1-18-5, Payne County | Absp. | 3,000 |
| Phillips Petroleum Co., Bartlesville | SW NW, Sec. 12-25-11, Osage County | Absp. | 5,000 |
| Phillips Petroleum Co., Bartlesville | SE SE, Sec. 6-24-10, Osage County | Absp. | 14,000 |
| Phillips Petroleum Co., Bartlesville | SW NW, Sec. 33-8-8, Seminole County | Absp. | 40,000 |
| Phillips Petroleum Co., Bartlesville | N half NW, Sec. 3-9-9, Hughes County | Absp. | 50,000 |
| Powers, M. F., Box 836, Depew | Sec. 30-5-7 | Absp. | 8,000 |
| Powers, M. F., Box 13, Hazel | Sec. 8-15-8 | Comp. | 4,200 |
| Powers & Quinlan, Preston | Sec. 2-14-12 | Comp. | 700 |
| Powers & Quinlan, Box 696, Beggs | Sec. 5-14-12 | Comp. | 1,000 |
| Pure Oil Co., Drumright | Sec. 32-18n-7e, Creek County | Comp. | 5,000 |
| Pure Oil Co., Oilton | Sec. 32-19n-7e, Creek County | Comp. | 4,000 |
| Pure Oil Co., Healdton | Sec. 11-4s-3w, Carter County | Comp. | 1,500 |
| Pure Oil Co., Hominy | Sec. 1-22n-8e, Osage County | Comp. | 2,000 |
| Pure Oil Co., Depew | Sec. 5-15-8e, Creek County | Comp. | 3,000 |
| Pure Oil Co., Okmulgee | Sec. 7-13n-13e, Okmulgee County | Comp. | 1,000 |
| Pure Oil Co., Seminole | Sec. 26-9n-6e, Seminole County | Absp. | 20,000 |
| Pure Oil Co., Seminole | Sec. 14-8n-6e, Seminole County | Comp. | 12,000 |
| Pure Oil Co., Seminole | Sec. 11-7-6, Seminole County | Comp. | 3,200 |
| Pure Oil Co., Seminole | Sec. 23-7-6, Seminole County | Comp. | 8,000 |
| Reserve Petroleum Co., Box 428, Shamrock | Sec. 3-16-7, Creek County | Absp. | 8,000 |
| Reserve Petroleum Co., Box 338, Barnsdall | Sec. 31-24-11, Osage County | Absp. | 5,000 |
| Sand Springs Home Gasoline Dept., Sand Springs | Sec. 4-18-7, Creek County | Comp. | 3,000 |
| Shaffer Oil & Refining Co., Shamrock | Sec. 4-16-7, Creek County | Absp. | 5,000 |
| Shaffer Oil & Refining Co., Kellyville | Sec. 17-17-11, Creek County | Comp. | 4,000 |
| Shaffer Oil & Refining Co., Mehan | Sec. 23-18-3, Payne County | Absp. | 8,000 |
| Shaffer Oil & Refining Co., Drumright | Sec. 16-17-8, Creek County | Comp. | 4,000 |
| Shaffer Oil & Refining Co., Cushing | Sec. 9-18-5, Payne County | Absp. | 4,000 |
| Shell Petroleum Corp., Stroud | SE, Sec. 1-14n-6e | Absp. | 5,000 |
| Shell Petroleum Corp., Yale | NW, Sec. 18-19n-6e | Comp. | 2,000 |
| Shell Petroleum Corp., Drumright | NE, Sec. 8-17n-7e | Absp. | 5,000 |
| Shell Petroleum Corp., Manford | NE, Sec. 18-19n-9e | Absp. | 3,000 |
| Shell Petroleum Corp., Covington | SW, Sec. 18-22n-3w | Absp. | 3,000 |
| Shell Petroleum Corp., Maud | SE, Sec. 7-8n-5e | Absp. | 20,000 |
| Shell Petroleum Corp., Marshall | SE, Sec. 19-19n-4w | Absp. | 50,000 |
| Shell Petroleum Corp., Maud | NW, Sec. 29-7n-5e | Absp. | 45,000 |
| Shell Petroleum Corp., Oklahoma City | NE, Sec. 30-11n-2w | Absp. | 12,000 |
| Shell Petroleum Corp., Seminole | SE, Sec. 6-8n-6e | Absp. | 5,000 |
| Signal Oil & Gas Co., Box 392, Bristow | Bristow | Absp. | 5,000 |
| Silurian Oil Co., Avant | Sec. 18-28-12, Osage County | Comp. | 1,500 |

## OKLAHOMA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Simms Oil Co., Dallas, Tex. | Asher | Absp. | 4,500 |
| Sinclair Oil & Gas Co., Box 68, Cleveland | S half SW, Sec. 35-21-8 | Comp. | 4,000 |
| Sinclair Oil & Gas Co., R.F.D. 1, Drumright | SW SW, Sec. 28-18-7 | Comp. | 9,000 |
| Sinclair Oil & Gas Co., Box 578, Shamrock | SW SE, Sec. 28-17-7 | Comp. | 12,000 |
| Sinclair Oil & Gas Co., Box 368, Covington | W half SW, Sec. 19-22-3 | Absp. | 20,000 |
| Sinclair Oil & Gas Co., Box 398, Hominy | SW, Sec. 9-23-8 | Comp. | 4,000 |
| Sinclair Oil & Gas Co., Box 6, Shidler | SW SE, Sec. 29-27-6 | Absp. | 30,000 |
| Sinclair Oil & Gas Co., Box 368, Cromwell | NE, Sec. 4-10-8 | Comp. | 12,000 |
| Sinclair Oil & Gas Co., Box 865, Seminole | NW NW, Sec. 35-9-6 | Absp. | 70,000 |
| Sinclair Oil & Gas Co., Box 787, Seminole | SW NE, Sec. 10-8-6 | Absp. | 50,000 |
| Sinclair Oil & Gas Co., Box 103, Pearson | SW, Sec. 24-7-4 | Comp. | 30,000 |
| Sinclair Oil & Gas Co., Box 337, Oklahoma City | SE NW, Sec. 30-11-2 | Absp. | 50,000 |
| Sinclair Oil & Gas Co., Box 297, Sasakwa | W half, Sec. 7-6-8 | Comp. | 20,000 |
| Sinclair Oil & Gas Co., Box 787, Seminole | NW NW, Sec. 36-8-6 | Comp. | 5,000 |
| Sinclair Oil & Gas Co., Box 787, Seminole | NE NW, Sec. 19-9-6 | Comp. | 50,000 |
| Sinclair Oil & Gas Co., R.R. 1, Wewoka | E half SE, Sec. 5-7-7 | Comp. | 30,000 |
| Skelly Oil Co., Bristow | SE, Sec. 15-14n-8e, Creek County | Absp. | 3,500 |
| Skelly Oil Co., Bristow | NW, Sec. 4-15n-9e, Creek County | Absp. | 2,000 |
| Skelly Oil Co., Davenport | NE, Sec. 2-14n-5e, Lincoln County | Absp. | 3,000 |
| Skelly Oil Co., Seminole | NW, Sec. 6-9n-6e, Seminole County | C-A | 36,000 |
| Skelly Oil Co., Seminole | SW, Sec. 17-9n-6e, Seminole County | Absp. | 35,000 |
| Skelly Oil Co., Lyman | NW, Sec. 11-27n-5e, Osage County | Absp. | 15,500 |
| Skelly Oil Co., Maramec | NW, Sec. 15-20n-6e, Pawnee County | Absp. | 3,250 |
| Skelly Oil Co., Maud | NE, Sec. 14-7n-6e, Seminole County | Comp | 8,000 |
| Skelly Oil Co., Slick | NW, Sec. 15-15n-10e, Creek County | Absp. | 7,000 |
| Skelly Oil Co., Wynona | SW, Sec. 24-24n-9e, Osage County | Absp. | 6,500 |
| Southland Gasoline Co., Tulsa | Sec. 33-19-7, Creek County | Comp. | 2,000 |
| Southwest Production Co., Bristow | Sec. 20-16-9, Creek County | Absp. | 3,000 |
| Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill. | NE, Sec. 4-18n-7e | Comp. | 13,867 |
| Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill. | NE, Sec. 21-17n-7e | Comp. | 13,134 |
| Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill. | SW, Sec. 34-18n-7e | Comp. | 19,588 |
| Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill. | NE, Sec. 4-16n-7e | Comp. | 7,949 |
| Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill. | NW, Sec. 29-18n-7e | Weathering | 25,000 |
| Star Gasoline Co., Sapulpa | Eram | Absp. | 500 |
| Superior Oil Corp., Box 1911, Tulsa | NW, Sec. 8-9-5, Seminole County | Comp. | 18,000 |
| Sterling Oil & Gas Co., Thompson Bldg., Tulsa | SE, Sec. 1-21-11, Osage County | Absp. | 5,000 |
| Test Oil Co., Bartlesville | Sec. 30-27-14e | Comp. | 400 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 8-17n-12e, Creek County | Comp. | 13,900 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 16-17n-7e, Creek County | Comp. | 11,000 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 22-15n-14e, Okmulgee County | Comp. | 6,800 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 9-18n-7e, Creek County | Comp. | 2,800 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 11-14n-12, Okmulgee County | Comp. | 1,500 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 2-14n-5e, Lincoln County | Absp. | 12,200 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 22-15n-11e, Okmulgee County | Absp. | 4,500 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 30-25n-8e, Osage County | Absp. | 5,000 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 2-18n-12e, Tulsa County | Comp. | 800 |
| The Texas Company (Delaware), Houston, Tex. | Sec. 7-8n-5e, Pottawatomie County | Absp. | 25,000 |
| Tidal Refining Co., Drumright | Sec. 8-17n-7e, 2 miles south of Drumright | Absp. | 15,000 |
| Tidal Refining Co., Glenpool | Sec. 14-17n-13e, ½ mile south of Glenpool | Absp. | 15,000 |
| Tidal Refining Co., Ochelata | Sec. 12-24n-12e, 3 miles south of Ochelata | Comp. | 3,000 |
| Tiger Mountain Oil Co., 802 Thompson Bldg., Tulsa | Sec. 36-14-11, Okmulgee County | Comp. | 3,000 |
| Transcontinental Oil Co., Morris | Sec. 22-13-14, Okmulgee County | C-A | 4,000 |
| Transcontinental Oil Co., Haskell | Sec. 28-15-14, Okmulgee County | Comp. | 1,500 |
| Transcontinental Oil Co., Morris | Sec. 11-13-14, Okmulgee County | Comp. | 600 |
| Transcontinental Oil Co., Bristow | Sec. 27-16-9, Creek County | C-A | 10,000 |
| Transcontinental Oil Co., Haskell | Sec. 1-14-15, Muskogee County | Comp. | 900 |
| Victor Gasoline Co., Box 1625, Drumright | Sec. 8-17-7 | Comp. | 3,200 |
| Victor Gasoline Co., Box 272, Bristow | Sec. 27-16-9 | Absp. | 6,000 |
| Victor Gasoline Co., Box 1172, Bristow | Sec. 8-16-8 | Comp. | 1,300 |
| Victor Gasoline Co., Box 152, Davenport | Sec. 3-14-5 | Absp. | 1,100 |
| Victor Gasoline Co., Box 517, Covington | Sec. 24-22-4 | Comp. | 900 |
| Victor Gasoline Co., Box 924, Seminole | Sec. 10-9-6 | Absp. | 1,500 |
| Victor Gasoline Co., Box 1215, Seminole | Sec. 10-8-6 | Absp. | 14,000 |
| Victor Gasoline Co., Box 511, Seminole | Sec. 11-9-5 | Comp. | 1,500 |
| Victor Gasoline Co., Box 924, Seminole | Sec. 5-7-7 | Absp. | 18,000 |
| Warner-Caldwell Oil Co., Nowata | Sec. 17-26n-6e | Comp. | 500 |
| Warner-Caldwell Oil Co., Nowata | Sec. 1-25n-16e | Absp. | 500 |
| Warner-Caldwell Oil Co., Nowata | Sec. 36-26n-14e | Comp. | 500 |
| Warner-Caldwell Oil Co., Nowata | Sec. 17-26n-17e | Comp. | 2,500 |
| Warner-Caldwell Oil Co., Nowata | Sec. 29-26n-17e | Absp. | 1,000 |
| Wentz, L. H., Oil Division, Three Sands | Sec. 21-28n-1e | Absp. | 5,000 |
| Wentz, L. H., Oil Division, Peckham | Sec. 17-28n-1e | Absp. | 5,000 |
| Wilcox, H. F., Oil & Gas Co., Beggs | Sec. 30-15-11 | Comp. | 2,000 |
| Wilcox, H. F., Oil & Gas Co., Bristow | Sec. 2-15-8 | Absp. | 2,000 |
| Wiser Oil Co., Bartlesville | Alluwe district | Comp. | 2,000 |
| Wolverine Petroleum Corp., Avant | NE, Sec. 12-23n-11e | Comp. | 1,500 |
| Wolverine Petroleum Corp., Avant | E½, Sec. 24-24-11e | Absp. | 4,000 |
| Wolverine Petroleum Corp., Avant | SE, Sec. 13-26n-12e | Comp. | 2,000 |
| Wolverine Petroleum Corp., Covington | SW, Sec. 22-4s-2w | Absp. | 8,000 |
| Wright, J. H., estate, Sapulpa | Sec. 24-17n-10e | Absp. | 3,500 |

## PENNSYLVANIA

| | | | |
|---|---|---|---|
| Alum Rock Gas Co., Oil City | Ashland Township | Comp. | 200 |
| Atlas Oil Co., Clarion | Farmington | Comp. | 350 |
| Barbory & Hardt | Wildwood | Comp. | 5 |
| Bartoe, Harry T., Petrolia | Petrolia | Comp. | 25 |
| Bayless & Fusenmeyer | Titusville | Comp. | 500 |
| Berry, J. P. | | Comp. | 60 |
| Berry, Pryor, Petrolia | Butler County | Comp. | 20 |
| Bizzard Gas Co., Emlenton | Emlenton | Comp. | 100 |
| Canonsburg Iron & Steel Works, Canonsburg | Washington County | Absp. | 350 |
| Carnahan, Charles E. and Lida M. | Tidioute | Comp. | 500 |
| Carnegie Natural Gas Co., Waynesburg | Greene County | Absp. | 2,000 |
| Carnegie Natural Gas Co., Lone Pine | Washington County | Absp. | 900 |
| Carpenter, M. A., Karns City | Fairview Township | Comp. | 50 |
| Clinger Oil & Gas Co., Tidioute | Hastings Bridge | Comp. | 800 |
| Clinger Oil & Gas Co., Tidioute | Fagundus | Comp. | 800 |
| Cochran, John G., & Co., Sheffield | 438 Sheffield Township | Absp. | 700 |
| Coffin, S. E., estate | | Absp. | 183 |

(Continued on Page 202)

**Used for (1) Aviation Gasoline (2) A Premium Motor Fuel (3) Blending**

| | |
|---|---|
| GRAVITY | 75-79° API |
| INITIAL | 95-100° F |
| 83%, or more at | 212° F |
| END POINT | 350°, or lower |
| RECOVERY | 98% |

**AND**

**The storage and handling losses are less than regular U. S. Motor**

**NATURAL GASOLINE FOR CONTROLLED VOLATILITY**

Phillips Petroleum Company
Bartlesville, Okla.

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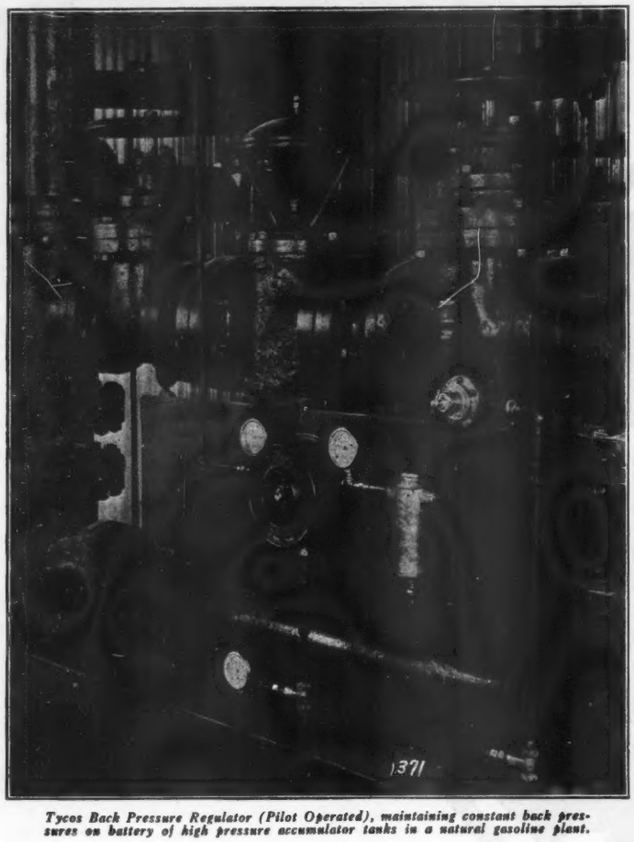


*Tycos Back Pressure Regulator (Pilot Operated), maintaining constant back pressures on battery of high pressure accumulator tanks in a natural gasoline plant.*

# *Tycos* Back Pressure Regulator (Pilot Operated)

THE *Tycos* Back Pressure Regulator is a pilot operated controller, operating either by compressed air or gas. The control pressure works directly against the diaphragm and the instrument proper. This in return operates the pilot valve to release or transmit the necessary motive pressure for opening and closing the control valve.

Whereas with ordinary self-acting type of regulator, a pressure change of several pounds may be necessary to operate the controller, the *Tycos* Regulator affords that immediate, sensitive, and positive response to the slightest fraction of pressure change in the system under control.

*Tycos* Pressure Regulators can be changed from the back pressure controller to the reducing pressure regulator, by the simple exchange of pilot valves in the instrument proper. Likewise a change from a higher pressure to a lower pressure controller, or vice versa, can be made by an exchange of diaphragms in the instrument itself, where the control valve itself is suitable for different pressure operations.

Write for *Tycos* Catalog Part 1700 which is devoted entirely to the application of *Tycos* instruments in the oil industry.

*Taylor Instrument Companies*

Rochester, New York, U. S. A.

Canadian Plant, *Tycos* Bldg., Toronto

Manufacturing Distributors in Great Britain, Short & Mason, Ltd., London

**Tycos**

**Temperature Instruments**

**Indicating Recording Controlling**


## NATURAL GASOLINE PLANTS BY STATES

### PENNSYLVANIA (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Columbia Gas & Electric Corp., McKinley | Elk County | Absp. | 1,500 |
| Columbia Gas & Electric Corp., Majorville | West Township | Absp. | 7,080 |
| Columbia Gas & Electric Corp., Waynesville | Franklin Township | Absp. | 3,930 |
| Columbia Gas & Electric Corp., Heard | Finley Township, West County | Absp. | 2,580 |
| | Mayburg | Comp. | 500 |
| Cook Oil Lease, Kelletville | Oakdale, R.F.D. 2 | Comp. | 75 |
| Daugherty, C. R., & Co., Y.M.C.A. Bldg., Butler | Petrolia | Comp. | 35 |
| Daugherty, C. R., & Co., Y.M.C.A. Bldg., Butler | Herman Station | Comp. | 45 |
| Daugherty, C. R., & Co., Y.M.C.A. Bldg., Butler | Clarion | Comp. | 50 |
| Dempseytown Gas Co., Oil City | 1 mile west of Chicora | Comp. | 25 |
| Dunlap, Harry G., Chicora | Titusville | Comp. | 192 |
| Edwards, E. A., Titusville | Lucinda | Comp. | 400 |
| Elsworth, Hefron & Co. | | Comp. | 300 |
| Ellenberger, W. J., & Sons | Chicora | Comp. | 500 |
| Elliott Brothers, Chicora | Deemstown Township, Washington County | Absp. | 1,600 |
| Equitable Gas Co., R.F.D. 1, Clarksville | Center Township, Greene County | Absp. | 6,000 |
| Equitable Gas Co., Rogersville | McDonald | Comp. | 100 |
| Federal Oil & Gas Co., McDonald | | Comp. | 50 |
| Fetzes, Charles, et al | Grand Valley | Comp. | 400 |
| Fleming, J. E., Titusville | | Comp. | 150 |
| Follstadt & Jewell | Barnes | Absp. | 300 |
| Forest Chemical Co. | Beaver County | Comp. | 100 |
| Forest Oil & Gas Co., Clinton | Karns City | Comp. | 75 |
| Gamble, James | R.R. 6, Butler | Comp. | 20 |
| Gould, Nancy E., & Son | Triumph Township, Warren County | Comp. | 120 |
| Grandin-Clinger-Bell & Jennings, Tidioute | Henry's Mill | Comp. | 400 |
| Hadden, J. B., Sheffield | Butler County | Comp. | 100 |
| Haskell & Bayliss, Pleasantville | Southwest Township, Warren County | Comp. | 50 |
| Haskell & Dunham, Pleasantville | Tidioute | Comp. | 600 |
| Haskell, Roth & Bayliss, Tidioute | Southeast of Petrolia | Comp. | 50 |
| Hazelwood Oil Co., Petrolia | Henry's Mill, Warren County | Comp. | 400 |
| Hickey & Rieg, Clarendon | Henry's Mill | Comp. | 300 |
| Hickey & Russell | Wayne Township, Greene County | Absp. | 20,000 |
| Hope Construction & Refining Co., Brave | Finley Township, Lawrence County | Char. | 3,600 |
| Hope Construction & Refining Co., Imperial | Versailles Township, Allegheny County | Char. | 2,600 |
| Hope Construction & Refining Co., McKeesport | Limestone Township, Clarion County | Absp. | 1,500 |
| Hope Construction & Refining Co., Mayport | Cowanshannoc Township, Armstrong County | Absp. | 900 |
| Hope Construction & Refining Co., Yatesboro | Trunkeyville, Forest County | Comp. | 300 |
| Hunter, Livingston L., Trust, Tidioute | Chicora | Comp. | 300 |
| Jackson, F. W., Chicora | Herron farm, Allegheny County | Comp. | 1,000 |
| Jennings, E. H., Bros. Co., 608 Columbia Bldg., Pittsburgh | Sproul farm, Allegheny County | Comp. | 100 |
| Jennings, E. H., Bros. Co., 608 Columbia Bldg., Pittsburgh | Chicora | Comp. | 60 |
| Johnson, C. H. and H. G., Dunlap | Triumph Township, Warren County | Comp. | 200 |
| Johnson & Meyer Brothers, Tidioute | Tidioute | Comp. | 225 |
| Kapp & Brockelhurst, Tidioute | 1½ miles southwest of Karns City | Comp. | 50 |
| McMeekin, Charles T., Karns City | Clarion | Absp. | 1,800 |
| Mars Oil Co., Oil City | Venango County | C-A | 4,000 |
| Mars Oil Co., Oil City | Potter Run | C-A | 750 |
| Mars Oil Co., Oil City | Lewis Run | C-A | 6,500 |
| Mars Oil Co., Oil City | Forest County | Absp. | 1,500 |
| Mars Oil Co., Oil City | Butler County | Comp. | 8 |
| Martin, Orie L. | Petroleum Center | Comp. | 200 |
| Midland Oil Co., Petroleum Center | 6 miles from Butler | C-A | 22 |
| Miller Gould & Co., Butler | | Comp. | 25 |
| Miller & Marshall | McCoy Road | Comp. | 40 |
| Montgomery, James, R.F.D. 1, McCoy Road | Chicora, Butler County | Comp. | 55 |
| Myers & Hayes, Chicora | West Hickory | Comp. | 200 |
| National Gasoline Co. | Grand Valley | Comp. | 225 |
| National Gasoline Co. | Sharon, Potter County | Absp. | 400 |
| North Penn Gas Co., Shinglehouse | Head farm, West Hickory, Forest County | Comp. | 100 |
| Norton & Jackson, Tidioute | Fairview Township | Comp. | 100 |
| O'Hara, Sarah C., 218 E. North St., Butler | | Comp. | 50 |
| Ostrander, Clarence S. | Petrolia | Comp. | 30 |
| Ostrander & Daugherty, Petrolia | Donegal Township (2) | Comp. | 150 |
| Parker, H. R., Chicora | Sheffield | C-A | 10,000 |
| Pennsylvania Oil Co. | Forest City | Comp. | 100 |
| Pequignot, E. O., Tidioute | Harmony Township, Forest County | Comp. | 200 |
| Pequignot, E. O., Tidioute | Webber farm, Forest County | Comp. | 100 |
| Pequignot, E. O., Tidioute | Pioneer (2) | Comp. | 600 |
| Pioneer Oil Co., Pioneer | Catfish | Comp. | 100 |
| Porter Brothers, Catfish | Butler County | Comp. | 150 |
| President Oil Co., Emlenton | Butler County | Comp. | 150 |
| President Oil Co., Emlenton | Venango County | Comp. | 500 |
| President Oil Co., Emlenton | Venango County | Comp. | 25 |
| President Oil Co., Emlenton | Butler Township, Butler County | Comp. | 40 |
| Price, Harry D., Renfrew | 6 miles north of Tionesta | Comp. | 80 |
| Red Brush Oil Co., Tionesta | One-half mile south of Karns City | Comp. | 60 |
| Riddle Farm Oil Co., Karns City | Chicora | Comp. | 70 |
| Ritzert Brothers, Chicora | Elk Township, Clarion County | Comp. | 600 |
| Sandy Oil & Gas Co., Shippenville | Titusville | Comp. | 65 |
| Sharpe, Rowe & Roeder, Titusville | 1 mile south of Karns City | Comp. | 15 |
| Sherwin, William E., Karns City | McKean County | Absp. | 1,500 |
| Sloan & Zook Co., Bradford | Clarion County | Comp. | 150 |
| Southern Oil Co., Clarion | Clarion County | Comp. | 150 |
| Southern Oil Co., Elmo | Clarion County | Comp. | 150 |
| Southern Oil Co., Miola | Venango County | Comp. | 150 |
| Southern Oil Co., Pleasantville | Lawrence County | Comp. | 50 |
| Southern Oil Co., Volant | Butler County | Comp. | 50 |
| Southern Oil Co., Butler | (23 plants) | Comp. | 15,000 |
| South Penn Oil Co., Pittsburgh | Grand Valley | Comp. | 100 |
| Stephens, W. J., Grand Valley | Pioneer | Comp. | 500 |
| Success Oil Co., Pioneer | 2½ miles S Titusville | Comp. | 1,000 |
| Surety Oil Co., Inc., Titusville | 2 miles from Grand Valley | Comp. | 80 |
| Tarbell & Co., Grand Valley | Triumph Township, Warren County | Comp. | 250 |
| Thomas, R. G., Tidioute | Triumph Township | Vac. | 50 |
| Tompsett Brothers, Tidioute | 5 miles S of Titusville | Absp. | 500 |
| Veach, George, Tidioute | Trunkeyville | Comp. | 30 |
| Veach Oil Co., Oil City | | Comp. | 80 |
| Vrooman, A. G. | 2 miles north of Evans City, Howard Township | Comp. | 4 |
| Wahl, A. R., Evans City | | Comp. | 40 |
| Warner, C. W. | | | |

(Continued on Page 203)

## NATURAL GASOLINE PLANTS BY STATES

### PENNSYLVANIA (Continued)

| Company and Plant Address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Warner-Caldwell Oil Co., Titusville | Oil Creek Township | Comp. | 1,000 |
| Wheeler, D. H., Box 86, Petrolia | Petrolia | Comp. | 50 |
| Will, Jacob, McDonald | Chartiers Township | Comp. | 30 |

### TEXAS

| | | | |
|---|---|---|---|
| Airolene Gasoline Corp., Shamrock | Sec. 9, Blk. 27, H.&G.N. R.R. Sur., Wheeler County | Absp. | 6,500 |
| Amerada Petroleum Corp., Drawer C., Fry | Chas. Betts Sur. No. 625, Brown County | Absp. | 10,000 |
| Arab Gasoline Corp., Eastland | SE Sec. 17, Blk. 4, H.& T.C.R.R. Sur., Eastland County | Absp. | 25,000 |
| Bell Oil & Gas Co. and Pacific American Oil Co., Borger | Borger | Absp. | 25,000 |
| Bell Oil & Gas Co., Borger | Borger | Absp. | 2,000 |
| Bell Oil & Gas Co., Burkburnett | Burkburnett | Absp. | 20,000 |
| Big Lake Oil Co., Texon | Sec. 2, Blk. 2, Regan County | Absp. | 25,000 |
| Boudinot Gasoline Co., Ranger | Ranger | Absp. | 5,000 |
| Breckenridge Gasoline Co., Breckenridge | Breckenridge | C-A | 6,000 |
| Brooks & Hanlon, Inc., Tulsa, Okla. | Breckenridge | C-A | 31,000 |
| California United Gasoline Corp., Coleman | Overall ranch | C-A | 10,000 |
| California United Gasoline Corp., Coleman | Weaver ranch | C-A | 10,000 |
| Canadian River Gas Co., Independence, Kans. | Sec. 33, Blk. P.Mc., E.L. R.R. Sur., Moore County | Absp. | 10,000 |
| Cannon Gasoline Co., Box 963, Amarillo | 2½ miles N. of Amarillo | Absp. | 5,000 |
| Chestnut & Smith Corp., Tulsa, Okla. | Ranger (4) | Absp. | 82,000 |
| Chestnut & Smith Corp., Tulsa, Okla. | Eastland | Absp. | 6,500 |
| Chestnut & Smith Corp., Tulsa, Okla. | Olden | Absp. | 8,500 |
| Cockrell-McIlroy Oil Co., Amarillo | Borger Field, Hutchinson County | Absp. | 3,000 |
| Coltexo Corp., Lefors | NW Sec. 2, A.C.H.&B.Sur., Gray County | Absp. | 25,000 |
| Coltexo Corp., Lefors | NE Sec. 1, Blk. B-2, H.& G.N. Sur., Gray County | Absp. | 25,000 |
| Coltexo Corp., Lefors | B.&B. Sur. No. 2, Gray County | Absp. | 10,000 |
| Columbian Gasoline Corp., Shamrock | Sec. 46, Blk. 17, H.&G.N. Sur., Wheeler County | Absp. | 12,000 |
| Consolidated Gasoline Co., Eastland | Eastland | Absp. | 3,000 |
| Continental Oil Co., Ponca City | Powell Lease, Burkburnett | Absp. | 1,500 |
| Continental Oil Co., Ponca City | Burnett lease, Electra | Absp. | 700 |
| Desdemona Gasoline Co., Fort Worth | 1 mile from Desdemona, Comanche County | Absp. | 5,000 |
| Dixon Creek Oil Co., Amarillo | Sec. 14, Blk. Y, M.&C. Sur., Hutchinson County | Absp. | 15,000 |
| Empire Oil & Refining Co., Tampa | Sec. 152, Blk. 3, I.&G.N. R.R. Sur., Gray County | Absp. | 2,500 |
| Empire Oil & Refining Co., Borger | Sec. 19, Blk. Y, Hutchinson County | Char. | 4,000 |
| Federal Gasoline Co., Amarillo | 2 miles S of Barger, Hutchinson County | Absp. | 12,000 |
| Gilmore, Forrest E., Co., Pampa | SE SW Sec. 163, Blk. 3, I.&G.N. Sur., | Absp. | 25,000 |
| Gilmore, Forrest E., Co., Mineral Wells | Mineral Wells | Absp. | 5,000 |
| Graham Oil & Gas Co., Graham | Morrison farm | Absp. | 7,500 |
| Gulf Production Co., Burkburnett | 1 mile N Burkburnett, Wichita County | Comp. | 4,365 |
| Gulf Production Co., Electra | Wichita County | Comp. | 1,782 |
| Gulf Production Co., Breckenridge | 8 miles S Breckenridge, Stephens County | Absp. | 11,760 |
| Gulf Production Co., Eliasville | Stephens County | Absp. | 4,900 |
| Gulf Production Co., Breckenridge | 3 miles N Breckenridge, Stephens County | Absp. | 12,000 |
| Gulf Production Co., Eastland | 3 miles W of Eastland, Eastland County | Absp. | 11,800 |
| Gulf Production Co., Ranger | 1 mile N of Ranger, Eastland County | Comp. | 8,700 |
| Hanlon Gasoline Co., Breckenridge | Near Parks | Absp. | 15,000 |
| Hanlon Gasoline Co., Breckenridge | Near Breckenridge | Absp. | 40,000 |
| Hanlon Gasoline Co., Eliasville | Near Eliasville | Absp. | 7,500 |
| Henderson, F. C., Corp., 503 Bank of Com. Bldg., Tulsa, Okla. | Sur. 82, Blk. 46, Y.&T.C. Ry., Hutchinson County | Absp. | 14,000 |
| Hirt-MacDermott & Co., 407 Capps Bldg., Fort Worth | Desdemona | Absp. | 5,000 |
| Humble Oil & Refining Co., Breckenridge | Stephens County | Absp. | 3,300 |
| Humble Oil & Refining Co., Breckenridge | Stephens County | Absp. | 2,900 |
| Humble Oil & Refining Co., Breckenridge | Stephens County | Absp. | 6,000 |
| Humble Oil & Refining Co., Breckenridge | Stephens County | Absp. | 2,600 |
| Humble Oil & Refining Co., Desdemona | Eastland | Comp. | 2,900 |
| Humble Oil & Refining Co., Burkburnett | Wichita County | Comp. | 1,400 |
| Humble Oil & Refining Co., Bellville | Austin County | Comp. | 660 |
| Humble Oil & Refining Co., Corsicana | Navarro County | Absp. | 8,000 |
| Humble Oil & Refining Co., Rising Star | Brown County | Absp. | 6,400 |
| Humble Oil & Refining Co., Bangs | Brown County | Absp. | 500 |
| Humble Oil & Refining Co., Luling | Caldwell County | Absp. | 7,600 |
| Humble Oil & Refining Co., Neches | Anderson County | Absp. | 5,000 |
| Humble Oil & Refining Co., Vernon | Wilbarger County | Absp. | 2,500 |
| Humble Oil & Refining Co., Iran | Pecos County | Absp. | 14,000 |
| La Salle Petroleum Co., 608 Wright Bldg., Tulsa, Okla. | Burkburnett | Comp. | 11,000 |
| Lone Star Gas Co., Petrolia | 3 miles S of Petrolia | Absp. | 15,000 |
| Lone Star Gas Co., Gainesville | 2½ miles W of Gainesville | Absp. | 15,000 |
| Lone Star Gas Co., Brazos | 2 miles E of Brazos | Absp. | 15,000 |
| Lone Star Gas Co., Gordon | 2 miles E of Gordon | Absp. | 25,000 |
| Lone Star Gas Co., Desdemona | 6 miles SE of Desdemona | Comp. | 2,000 |
| Lone Star Gas Co., Box 488, Ranger | 9 miles S of Ranger | Comp. | 8,000 |
| Lone Star Gas Co., Box 882, Ranger | 7 miles NE of Ranger | Comp. | 2,000 |
| Lone Star Gas Co., R.F.D. 1, Cisco | 7 miles SE of Moran | Absp. | 5,000 |
| Lone Star Gas Co., Sipe Springs | 8 miles from Rising Star | Comp. | 1,000 |
| McMan Oil & Gas Co., Desdemona | Desdemona | Comp. | 4,000 |
| McMan Oil & Gas Co., Burkburnett | Burkburnett | Comp. | 6,000 |
| McMan Oil & Gas Co., Desdemona | Desdemona | Absp. | 4,000 |
| Magnolia Petroleum Co., Burkburnett | J. G. Hardin lease | Comp. | 4,500 |
| Magnolia Petroleum Co., Desdemona | J. W. Caruth lease | Absp. | 10,000 |
| Magnolia Petroleum Co., Electra | Sec. 17, Blk. 13, H.&T.C. R.R. Sur., Wilbarger County | Comp. | 4,000 |
| Magnolia Petroleum Co., Westbrook | Sec. 113, Blk. 29, W.&N.W. Sur., Howard County | Absp. | 1,000 |
| Magnolia Petroleum Co., Olden | P. O. Harris lease | Absp. | 10,000 |
| Magnolia Petroleum Co., Pampa | Sec. 82, Blk. 3, T.&G.N. R.R. Sur., Gray County | Absp. | 5,500 |
| Magnolia Petroleum Co., Lelan | Sec. 39, Blk. 24, H.&G.N. R.R. Sur., Wheeler County | Absp. | 1,200 |
| Magnolia Petroleum Co., Skellytown | Sec. 91, Blk. 4, I.&G.N. R.R. Sur., Carson County | Absp. | 5,000 |
| Magnolia Petroleum Co., Pampa | Sec. 30, Blk. B-2, H.&G.N. R.R. Sur., Gray County | Absp. | 10,000 |
| Magnolia Petroleum Co., Breckenridge | Sec. 13, Stephens County | Absp. | 7,500 |
| Mid-Kansas Oil & Gas Co., Box 211, Desdemona | Sec. 2, Juana Salinas Sur., Eastland County | Absp. | 4,000 |
| Mid-Kansas Oil & Gas Co., Caddo | Sec. 19, Blk. 5, T.&B. Sur., Stephens County | Absp. | 8,000 |
| Mid-Kansas Oil & Gas Co., Box 277 | Sec. 20, Blk. 2, S.P.R.R. Sur., Stephens County | Absp. | 8,000 |

(Continued on Page 204)

Mechanically Correct Oil Well Pumping Powers

Fabricated with "H" Beam for Sampson Post and Walking Beam.
Toggle made from steel casting.
Interchangeable bronze bearings throughout.
Cut gears running in oil.
Patented cam motion keeps polish rod in alignment at all times.
Can be used to pump from one to three wells.

Stork Engineering Company
Saginaw, Michigan, U. S. A.

# NATURAL GASOLINE PLANTS BY STATES

## TEXAS (Continued)

| Company and plant address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| National Supply Co. of Texas, Shamrock | Sec. 41, Blk. 24 | Absp. | 11,500 |
| Omar Gasoline Co., Wichita Falls | NW of Burkburnett | Comp. | 11,500 |
| Orfic Gasoline Production Co. of Texas, Tulsa, Okla. | Desdemona | Comp. | 6,000 |
| Orfic Gasoline Production Co. of Texas, Tulsa, Okla. | Desdemona | Absp. | 4,000 |
| Pacific American Gasoline Co. of Texas, Box 1474, Borger | Sec. 28, A.&B. Sur. | Absp. | 33,000 |
| Phelps Gasoline Co., Shamrock | SW, Sec. 41, Wheeler County | Absp. | 12,000 |
| Phillips Petroleum Co., Breckenridge | SE, Sec. 8, Blk. 5, T.&P. R.R. Sur., Stephens County | Absp. | 15,000 |
| Phillips Petroleum Co., Borger | NE SE, Sec. 21, Blk. Y, A.&B. Sur., Hutchinson County | Absp. | 40,000 |
| Phillips Petroleum Co., Bowers | W½, Sec. 62, Blk. B-2, H.&G.N. Sur., Gray County | Absp. | 50,000 |
| Phillips Petroleum Co., Canadian | NW SE, Sec. 1, Blk. X-02, Hutchinson County | Absp. | 25,000 |
| Phillips Petroleum Co., Carter | SW, Sec. 2, Blk. 8, T.& N.O.R.R. Sur., Stephens County | Comp. | 2,000 |
| Phillips Petroleum Co., Eliasville | 6.88a. N half, Sur. 1,174, T.E.&L., Stephens County | Absp. | 12,000 |
| Phillips Petroleum Co., Frankell | 5 ac., SE SW, Sec. 51, Blk. 6, T.&P. Sur., Stephens County | Absp. | 8,500 |
| Phillips Petroleum Co., Gorman | SE cor. Thos. Mulryne Sur., H.&T.C., Blk 1, Eastland County | Absp. | 12,000 |
| Phillips Petroleum Co., Gray | E½, Sec. 32, Blk. 2, H.&G.N. Sur., Gray County | Absp. | 100,000 |
| Phillips Petroleum Co., Helios | W center part, W. A. Eakin 132 ac. tract, Eastland County | Absp. | 12,000 |
| Phillips Petroleum Co., Herron City | SE 20 ac., P. J. Humphreys Sur. A-153, Young County | Absp. | 9,000 |
| Phillips Petroleum Co., Hohertz | 12 ac., Sec. 63, Blk. 4, T.&P.R.R. Sur., Stephens County | Char. | 5,000 |
| Phillips Petroleum Co., Ibex | NW, Sec. 28, B.A.L., Shackelford County | Absp. | 45,000 |
| Phillips Petroleum Co., Johnson | Cen. 60 ac., S½, Sec. 69, Blk. 46, H.&T.C. Sur., Hutchinson County | Absp. | 50,000 |
| Phillips Petroleum Co., Lefors | NE NE, Sec. 56, Blk. 25, H.&G.N. Sur., Gray County | Absp. | 15,000 |
| Phillips Petroleum Co., McCamey | NE NE, Sec. 216, C.C.S.D. &R.G.N.G.R.R. Sur., Blk. F, Crane County | Absp. | 75,000 |
| Phillips Petroleum Co., Necessity | SW cor., B. F. Satterwhite 20 ac. tract, Blk. 15, T.&P.R.R. Sur., Stephens County | Absp. | 2,500 |
| Phillips Petroleum Co., Oil City | 20 ac., SE cor., R. D. Owens Sur. A-2,249, Young County | Absp. | 7,500 |
| Phillips Petroleum Co., Olney | 17.61 ac., T.E.&L. Sur., Blk. 2,403, Archer County | Comp. | 10,000 |
| Phillips Petroleum Co., Pampa | W½, SW, Sec. 88, H.&G.N. Sur., Blk. B-2, Gray County | Absp. | 45,000 |
| Phillips Petroleum Co., Panhandle | SW, Sec. 113, Blk. 5, I.&G.N.R.R. Sur., Carson County | Absp. | 15,000 |
| Phillips Petroleum Co., Pantex | SE cor., Mary Whitley Sur., Blk. 8, Hutchinson County | Absp. | 50,000 |
| Phillips Petroleum Co., Phildan | NW SE, Sec. 88, Blk. B-2, H.&G.N. Sur., Gray County | Comp. | 20,000 |
| Phillips Petroleum Co., Rockcreek | N NW, Sec. 22, Blk. Y, A.&B. Sur., Hutchinson County | Absp. | 45,000 |
| Phillips Petroleum Co., Roeser | SW SW, Sec. 17, Blk. 8 T.&P.R.R. Sur., Stephens County | Absp. | 12,000 |
| Phillips Petroleum Co., South Bend | 20 ac., N center, J. Garrett Sur. A-108, Young County | Absp. | 9,000 |
| Phillips Petroleum Co., Sanford | Sec. 81, Blk. 46, H.&T.C. R.R. Sur., Hutchinson County | Absp. | 15,000 |
| Phillips Petroleum Co., Texroy | SE, Sec. 3, Blk. B-3, D.& S.F.R.R. Sur., Hutchinson County | Absp. | 45,000 |
| Phillips Petroleum Co., Wooten | 8 ac., W½ NE, Sec. 43, Blk. 6, T.&P. Sur., Stephens County | Absp. | 6,500 |
| Philmore Gasoline Corp., Bryson | Leffel farm, Isaac Hughson Sur., Jack County | Absp. | 12,000 |
| Red River Oil Co., Box 712, Tulsa, Okla. | Electra, Tex. | Comp. | 2,500 |
| Roeser & Pendleton, Inc., Fort Worth | Cook ranch, Shackelford County | Absp. | 30,000 |
| Shamrock Oil & Gas Co., Amarillo | Sec. 50, Blk. 25, H.&G.N., Gray County | Absp. | 16,000 |
| Shell Petroleum Corp., Pampa | SW, Sec. 83, Blk. 3, I.& G.N. Sur. | Absp. | 10,000 |
| Shell Petroleum Corp., Pampa | SE, Sec. 107, Blk. 5, I.& G.N. Sur. | Absp. | 8,000 |
| Shell Petroleum Corp., Grosvenor | Sec. 1, S.A.&M.G. Sur. | Absp. | 10,000 |
| Signal Gasoline Co. of Texas, Box 157, Best | Reagan County | Absp. | 30,000 |
| Silurian Oil Co., Burkburnett | NE part Morris May Sur. No. 8 and G.C.S.F.R.R. Nos. 5 and 6, Wichita County | Comp. | 1,300 |
| Skelly Oil Co., Skellytown | NE, Sec. 174, Blk. 3, Gray County | Absp. | 16,000 |
| Skelly Oil Co., Skellytown | Sec. 88, Blk. 4, I.&G.N. R.R. Sur., Carson County | Absp. | 31,000 |
| Skelly Oil Co., Skellytown | Sec. 88, Blk. 4, I.&G.N. R.R. Sur. | Char. | 11,000 |
| Skelly Oil Co., Borger | Secs. 5, 11, 20, 6, Blk. Y, Hutchinson County | Absp. | 18,000 |
| Skelly Oil Co., Borger | Sec. 4, Blk. B-4, D.&S.E. Sur., Hutchinson County | Absp. | 12,000 |
| Smith-Hanlon, Inc., Breckenridge | Breckenridge | C-A | 10,000 |
| Southern Gasoline Co., Ranger | Tiffin | Absp. | 2,500 |
| South Plains Pipe Line Co., Independence, Kans. | Sec. 45, Blk. B-2, A.B.&M. Sur., Potter County | Absp. | 2,500 |
| Sterling Oil & Gas Co., Abilene | SE. Sec. 1-21-11 | Absp. | 200 |

## TEXAS (Continued)

| Company and Plant Address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| The Texas Company (Delaware) Houston | ½ mile NW Electra, Wichita County | Comp. | 9,300 |
| The Texas Company (Delaware) Houston | 3 miles NW Burkburnett, Wichita County | Comp. | 33,000 |
| The Texas Company (Delaware) Houston | 2½ miles NE Olney, Archer County | Comp. | 7,000 |
| Texas Gasoline Co., Desdemona | 1½ miles from Desdemona | Absp. | 2,000 |
| Texas Pacific Coal & Oil Co., Fort Worth | Caddo | Absp. | 12,000 |
| Texas Pacific Coal & Oil Co., Fort Worth | Mingus | Absp. | 5,000 |
| Texas Pacific Coal & Oil Co., Fort Worth | Eliasville | Absp. | 12,000 |
| Texas Pacific Coal & Oil Co., Fort Worth | Frankell | Absp. | 8,000 |
| Tidal Western Oil Corp., Burkburnett | Burkburnett | Comp. | 15,000 |
| Voliwin Gasoline Co., 1325 Glenarm St., Denver | McCleskey farm, Frankell | Absp. | 1,500 |
| Waggoner Refining Co., Electra | Electra | Absp. | 5,000 |
| Ward Gasoline Co., Breckenridge | 7 miles N of Breckenridge on J. T. Ball ranch | Absp. | 6,000 |
| Western Oil Corp. of Texas, Electra | Electra | Absp. | 8,000 |
| Wilcox, H. F., Oil & Gas Co., Pampa | Sec. 62, Blk. 3, I.&G.N. Sur. | Absp. | 10,000 |

## WEST VIRGINIA

| | | | |
|---|---|---|---|
| American Oil Development Co., Frew | Big Moses | C-A | 1,500 |
| American Oil Development Co., Meadville | Wick | Comp. | 125 |
| American Oil Development Co., St. Marys | Hebron | Comp. | 175 |
| Carbide & Carbon Chemicals Corp., Hastings | Carbide, Wetzel County | Comp. | 5,000 |
| Carbide & Carbon Chemicals Corp., Diamond | Diamond, Kanawha | Comp. | 8,000 |
| Carbide & Carbon Chemicals Corp., Clendenin | Kanawha County | Absp. | 2,000 |
| Carnegie Natural Gas Co., Hundred | Wetzel County | Absp. | 3,100 |
| Carnegie Natural Gas Co., Underwood | Tyler County | Absp. | 2,040 |
| Carnegie Natural Gas Co., Woodruff | Marshall County | Absp. | |
| Carnegie Natural Gas Co., Pine Grove | Wetzel County | Absp. | 1,680 |
| Carnegie Natural Gas Co., Toll Gate | Ritchie County | Absp. | |
| Casto Oil Co., St. Mary's | Union district | Comp. | 250 |
| Chemical Oil & Gas Co., Big Bend | Sherman district, Calhoun County | Comp. | 750 |
| Colonial Oil Co., Parkersburg | Tyler County | Comp. | 200 |
| Dinsmore Oil Co., St. Mary's | Crawford County | Comp. | 100 |
| Dinsmore Oil Co., St. Mary's | Clark County | Comp. | 50 |
| Dinsmore Oil Co., St. Mary's | Pleasants County | Comp. | 750 |
| Dunn-Mar Oil & Gas Co., Route 3, Fairview | Clay district, Monongalia County | Comp. | 90 |
| Federal Oil & Gas Co., The, Elizabeth | Burning Springs district, Wirt County | Comp. | 250 |
| Federal Oil & Gas Co., The, Weston | Weston | Comp. | 150 |
| Hapgood, Roswell T., & Co., Charleston | Cedar Grove | Char. | 3,500 |
| Henighan & Hanlon, Sistersville | Doddridge County | Comp. | 200 |
| Hope Construction & Refining Co., Sistersville | Tyler County | Absp. | 400 |
| Hope Construction & Refining Co., Bristol | Harrison County | Absp. | 8,000 |
| Hope Construction & Refining Co., Barren Creek | Kanawha County | Absp. | 12,000 |
| Hope Construction & Refining Co., Ellenboro | Pleasants County | Absp. | 300 |
| Hope Construction & Refining Co., Spencer | Roane County | Absp. | 1,000 |
| Hope Construction & Refining Co., Farmington | Marion County | Absp. | 15,000 |
| Hope Construction & Refining Co., Sistersville | Tyler County | Comp. | 1,000 |
| Hope Construction & Refining Co., Mount Clair | Harrison County | Absp. | 2,500 |
| Hope Construction & Refining Co., Pine Grove | Wetzel County | Absp. | 40,000 |
| Hope Construction & Refining Co., Littleton | Wetzel County | Absp. | 15,000 |
| Hope Construction & Refining Co., Sistersville | Tyler County | Comp. | 1,500 |
| Hope Construction & Refining Co., Salem | Harrison County | Absp. | 4,000 |
| Hope Construction & Refining Co., Waverly | Wood County | Absp. | 5,000 |
| Hope Construction & Refining Co., Middlebourne | Middlebourne County | Comp. | 400 |
| Hope Construction & Refining Co., Rachel | Marion County | Absp. | 10,000 |
| Hudson Oil Co., Parkersburg | Cairo, Ritchie County | Comp. | 100 |
| Imperial Oil & Gas Products Co., Pittsburgh, Pa. | Harrisville | C-A | 2,000 |
| Kanawha Oil Co., 608 Columbia Bldg., Pittsburgh, Pa. | Jacksonburg, Wetzel County | C-A | 1,000 |
| Kanawha Oil Co., 608 Columbia Bldg., Pittsburgh, Pa. | Jacksonburg, Wetzel County | Comp. | 250 |
| McKelvey Oil & Gas Co., Sistersville | Ellsworth district, Tyler County | Comp. | 50 |
| Manufacturers Light & Heat Co., Porters Falls | Greene Township | Absp. | 6,540 |
| Manufacturers & Light Heat Co., Rosbys Rock | Clay Township | Absp. | 1,740 |
| Melrose Oil & Gas Co. | Middlebourne | Comp. | 35 |
| Melrose Oil & Gas Co. | Middlebourne | Comp. | 25 |
| Melrose Oil & Gas Co. | Middlebourne | Comp. | 25 |
| National Compressing Co., Parkersburg | Rutherford, Ritchie County | Comp. | 50 |
| New York Petroleum Co., Rutherford | Ritchie County | Comp. | 100 |
| Ohio Fuel Oil Co., Sloffel | Elk district | Absp. | 1,000 |
| Ohio Fuel Oil Co., Charleston | Blue Creek | Comp. | 1,050 |
| Ohio Fuel Oil Co., Charleston | Schroeder | Comp. | 2,400 |
| Oil & Gas Co., St. Mary's | Ritchie County | Comp. | 300 |
| Owens, Libbey-Owens Gas Dept., Charleston | South Malden, Kanawha County | Absp. | 10,000 |
| Pittsburgh & West Virginia, Hundred | Church district Wetzel County | Absp. | 4,000 |
| Pure Oil Co., Dawes | Kanawha County | C-A | 15,000 |
| Pure Oil Co., Sistersville | Carson heirs farm, Washington County | Comp. | 200 |
| Pure Oil Co., Sistersville | Kile farm, Tyler County | Comp. | 150 |
| Reno Oil Co., Sistersville | Tyler County | Comp. | 361 |
| Reno Oil Co., Sistersville | Tyler County | Comp. | 52 |
| Reno Oil Co., Sistersville | Tyler County | Comp. | 73 |
| Reno Oil Co., Sistersville | Tyler County | Comp. | 23 |
| Reno Oil Co., Sistersville | Ritchie County | Comp. | 61 |
| Reno Oil Co., Sistersville | Ritchie County | Comp. | 129 |
| Reno Oil Co., Sistersville | Ritchie County | Comp. | 43 |
| Reserve Gas Co., Box 1756, Pittsburgh | Valley Chapel | Absp. | 20,000 |
| Schlegel, P., and Edward Fried | | Comp. | 85 |
| Southern Oil Co., Eureka | Pleasants County | Comp. | 100 |
| Southern Oil Co., McFarlan | Ritchie County | Absp. | 1,500 |
| Southern Oil Co., Porters Falls | Wetzel County | Comp. | 100 |
| Southern Oil Co., Sistersville | Tyler County | Comp. | 150 |
| South Penn Oil Co., Pittsburgh, Pa. | 37 plants | Comp. | 20,000 |
| Sutton Bros., Stubenville, Ohio | Hancock County | Comp. | 50 |
| Treat, E. M., Oil & Gas Co., Pennsboro | Ritchie County | Comp. | 150 |
| Tuel & Thoenen, Sistersville | Sistersville (3) | Comp. | 600 |
| Tyler Oil Co., Sistersville | Tyler County | Comp. | 29 |
| Tyler Oil Co., Sistersville | Tyler County | Comp. | 49 |
| Tyler Oil Co., Sistersville | Tyler County | Comp. | 44 |
| Viking Gasoline Corp., Morgantown | Monongalia County | Char. | 1,000 |
| Viking Realty Co., Martha | Cabell County | Char. | 1,000 |
| Virginia Gasoline & Oil Co., Sandyville | Jackson County | Char. | 40,000 |
| Virginia Gasoline & Oil Co., Ona | Cabell County | Absp. | 18,000 |
| Virginia Gasoline & Oil Co., Charleston | Kanawha County | Char. | 25,000 |
| Virginia Gasoline & Oil Co., Clendenin | Kanawha County | Absp. | 40,000 |
| Virginia Gasoline & Oil Co., Charleston | Kanawha County | Char. | 2,000 |
| Virginia Gasoline & Oil Co., Spencer | Roane County | Char. | 12,000 |
| Virginia Gasoline & Oil Co., St. Albans | Kanawha County | Char. | 3,500 |
| Virginia Gasoline & Oil Co., Louisa | Wayne County | Char. | 3,500 |
| Virginia Gasoline & Oil Co., Hubball | Lincoln County | Char. | 12,000 |
| Virginia Gasoline & Oil Co., Jane Lew | Lewis County | Absp. | 3,000 |
| Virginia Gasoline & Oil Co., Mammoth | Kanawha County | Absp. | 2,500 |
| Virginia Gasoline & Oil Co., Porter | Clay County | Comp. | 1,500 |
| Virginia Gasoline & Oil Co., Blue Creek | Kanawha County | Comp. | 200 |
| Virginia Gasoline & Oil Co., Stoffell | Kanawha County | Absp. | 1,200 |

(Continued on Page 206)

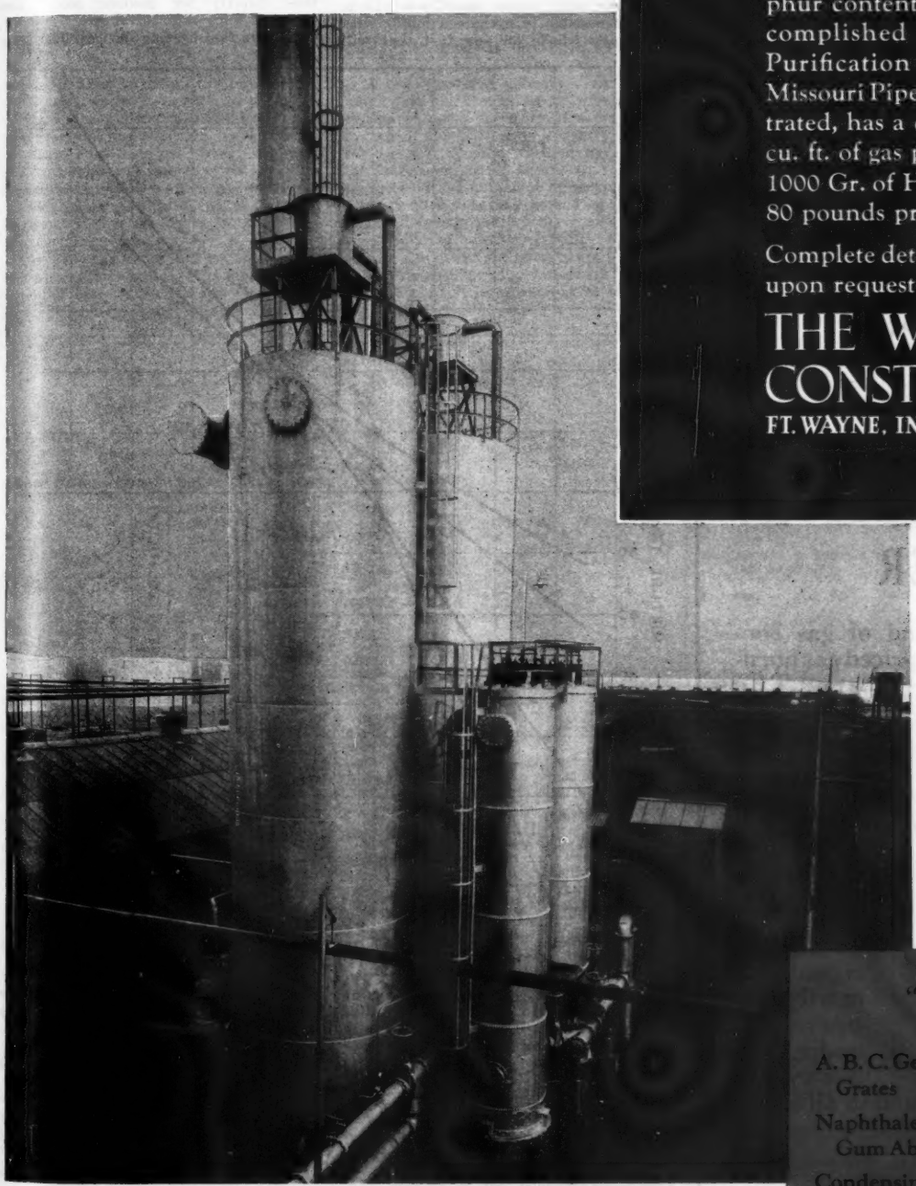
# For PURIFYING oil refinery gases

The purifying of oil refinery still gases, under high pressure and with high Sulphur content, has been successfully accomplished with the Koppers Liquid Purification Processes. The Illinois-Missouri Pipe Line Company plant, illustrated, has a daily capacity of 6,000,000 cu. ft. of gas per day, the gas containing 1000 Gr. of $H_2S$ per 100 cu. ft., at 50 to 80 pounds pressure.

Complete detailed information available upon request.

THE WESTERN GAS CONSTRUCTION CO.

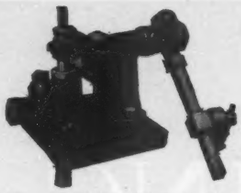
FT. WAYNE, IND. *Subsidiary of* THE KOPPERS CO.



*Purification Plant of the Illinois-Missouri Pipe Line Company at Wood River, Ill. 6,000,000 cubic feet of Refinery Still Gas purified daily.*

"WESTERN GAS" *Designs and Builds*

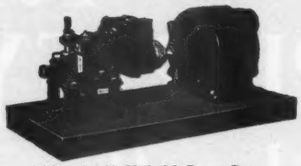
- A. B. C. Generator Grates
- Naphthalene and Gum Absorbers
- Condensing Apparatus
- Carburetted Water Gas Plants
- Blue Water Gas Plants
- Gas Dehydration Plants
- Holders (Gas, Oxygen, etc.)
- Liquid Purification Plants
- Oxide Boxes (Purifiers)
- Welded Steel Pipe
- Tower and Rotary Scrubbers
- Valves



SR — 4 x 10 Hills-McCanna Pump, equipped with either 5/16" or ½" piston lever drive.

**TREATING**

**We Have a Pump for Any Chemical, to Deliver Any Quantity and Any Method of Drive for Any Treating System.**



SM — 4 x 10 Hills-McCanna Pump, motor drive, either 5/16" or ½" piston.

We also have a very serviceable thermostat for maintaining close automatic control on temperature of oil being treated.

*Carried in Stock in Tulsa*

EDWARD SOPH, 215 Alexander Bldg., Tulsa, Okla.



**Leases, Royalties, Production**

are sold quickly, profitably, through The Oil and Gas Journal Classified Wants. Each week many of our classified users write us attesting to that fact.

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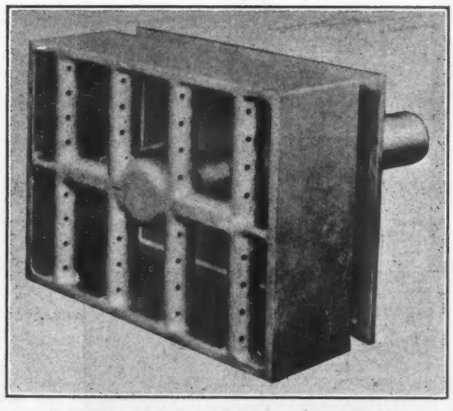
The Oil and Gas Journal

Classified Wants Department



# THE DUQUESNE MULTI-JET CAST BURNER

To meet the ever-increasing demand of gas consumers for durable, efficient, and low priced gas burners, The Duquesne Burner Service Company presents its Multi - Jet Burner.



The burner is designed primarily for operation under various types of oil field and heating boilers, stills, and in all applications where an efficient, low-priced burner of rugged construction is desired.

*WRITE FOR BULLETINS*

DUQUESNE BURNER SERVICE COMPANY

P. O. Box 1753 Pittsburgh, Pa.


## NATURAL GASOLINE PLANTS BY STATES

**WEST VIRGINIA (Continued)**

| Company and Plant Address— | Field location— | Type of plant | Daily cap'y (gals.) |
|---|---|---|---|
| Virginia Gasoline & Oil Co., Walgrove | Kanawha County | Absp. | 1,000 |
| Virginia Gasoline & Oil Co., Three Mile | Kanawha County | Absp. | 3,500 |
| Virginia Gasoline & Oil Co., Looneyville | Roane County | Absp. | 800 |
| Watson, G. L., Parkersburg | Belmont | Comp. | 50 |
| Wiser Oil Co., Co., Sistersville | Roane County | Comp. | 100 |
| **WYOMING** | | | |
| Carter Oil Co., Box 2045, Tulsa, Okla. | Sec. 5-39n-78w, Natrona County | Absp. | 9,000 |
| Midwest Refining Co., Casper | Salt Creek Field | Comp. | 80,000 |
| New York Oil Co., Casper | Teapot Dome, Naval Reserve No. 3 | Comp. | 2,000 |
| Ohio Oil Co., Manville | Niobrara County | Absp. | 7,500 |
| Ohio Oil Co., Rock River | Carbon County | Absp. | 4,500 |
| Ohio Oil Co., Columbine | Natrona | Absp. | 14,400 |
| Ohio Oil Co., Kirby | Hot Springs County | Comp. | 7,560 |
| Producers & Refiners Corp., Casper | N½ NW, Sec. 7-33n-79w | Absp. | 3,500 |
| Standard Engineering Corp., Box 1739, Casper | Casper | Absp. | 2,500 |

## PERFORMANCE AND DISTILLATION DATA

(Continued from Page 133)

usually used to supply a richer mixture indicate that 35 to 40 per cent of the fuel should be vaporized for satisfactory performance under such conditions. It is usually possible to operate a motor with use of the choke on any fuel that will start the cold motor in 10 revolutions or less with a 1-to-1 air-fuel ratio. But with such a fuel it is usually necessary to continually work the choke in order to keep the motor running, while with 35 per cent of the fuel vaporized entirely satisfactory performance can usually be obtained at one position of the choke.

Figure 4 is presented as a summary of the data obtained on a number of different motors, and may be used with confidence provided only the mixture temperature as it enters the cylinder blocks, and the air-fuel ratio supplied by the carburetor are known with reasonable accuracy.

An extensive investigation into the metering characteristics of carburetors now in use, and the mixture temperature on different cars under atmospheric temperatures ranging from —20° to 90° F. may be summarized by the data presented in Figure 5. In this figure the mixture temperature as measured by a thermocouple in the intake manifold near the block is plotted as a function of time after the cold motor was started. The upper curves give the mixture temperature directly for modern motor cars equipped with radiator shutters and efficient manifold heating devices. The lower curves indicate the mixture temperature above atmospheric temperature for motors not equipped with thermostatically controlled radiator shutters. These temperatures vary with driving conditions and with the construction of the motor car. However, these two sets of curves in general may be taken as representing the two extreme types of motor equipment now in use.

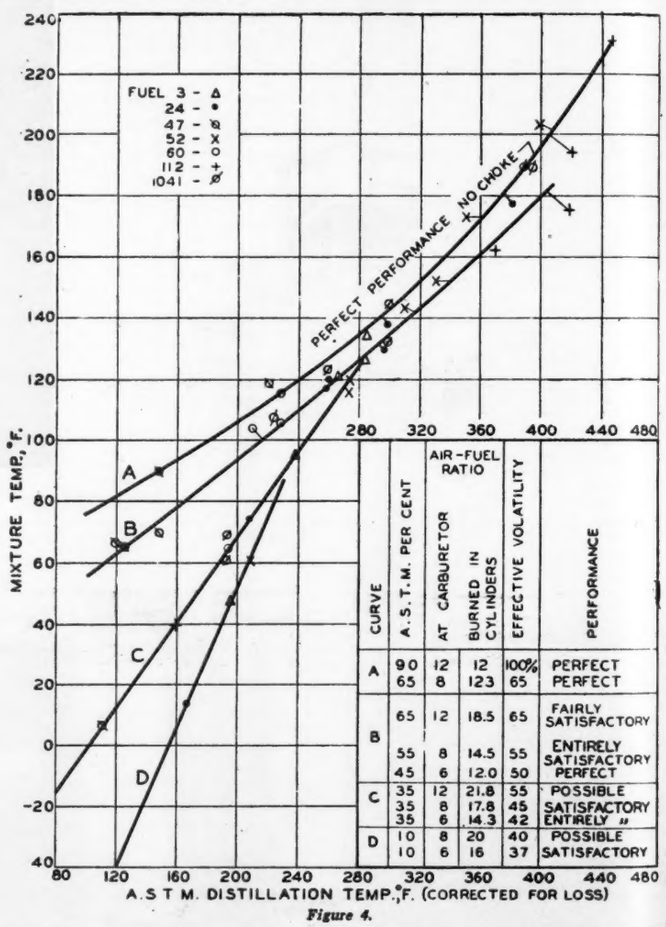



*Figure 4.*

By combining the information contained in Figures 3, 4 and 5, it is possible to estimate with sufficient accuracy for all practical purposes the A.S.T.M. distillation characteristics required in a fuel to give any desired quality of throttle response on the average type of automotive equipment now in use. This has been done in preparing the two tables of suggested fuel volatility for different at-

mospheric temperatures given at the end of this paper.

### Vapor Lock

Some cars heat the liquid fuel as well as the vapor to high temperatures and experience difficulty due to vapor lock when using fuels of high vapor pressure. The obvious remedy of this condition is proper design of the fuel system to keep the fuel at the lowest possible tempera-

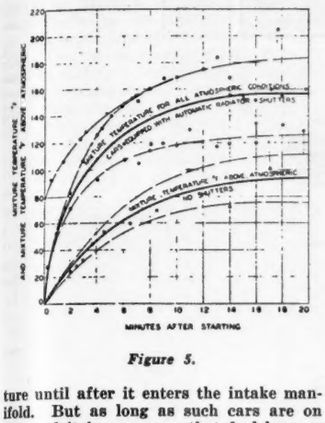

MIXTURE TEMPERATURE °F. ABOVE ATMOSPHERIC AND MIXTURE TEMPERATURE °F. ATMOSPHERIC
MIXTURE TEMPERATURE FOR ALL ATMOSPHERIC CONDITIONS
CARBURETOR EQUIPPED WITH AUTOMATIC RADIATOR SHUTTERS
MIXTURE TEMPERATURE ½ ABOVE ATMOSPHERIC
NO SHUTTERS
MINUTES AFTER STARTING

*Figure 5.*

ture until after it enters the intake manifold. But as long as such cars are on the road it is necessary that fuel be supplied to give satisfactory performance. Extensive road tests with cars susceptible to this trouble indicate that the probable maximum liquid fuel temperature may be represented by the following expression: Maximum fuel temperature °F. = 100 + ½ atmospheric temperature °F.

The tendency of a fuel to form vapor and cause trouble due to vapor lock is measured directly as its vapor pressure. In the complete report relationships between vapor pressure as determined in the Reid bomb and probable vapor locking temperature are given. For the present the temperature at which the 10 per cent is vaporized in the A.S.T.M. distillation may be taken as a fair approximation of the temperature at which the vapor pressure of the fuel is equal to atmospheric pressure. For this reason the safe minimum 10 per cent temperature in °F. may be taken as:

100 + average atmospheric temperature

2

### A.S.T.M. Distillation Characteristics in Terms of Engine Performance

The differences in the fuel requirements of different motors are due largely to differences in mixture temperature and in carburetor metering characteristics rather than in the distributing characteristics of the manifold. For this reason data such as suggested in the accompanying tables may be readily computed by anyone from a knowledge of the air-fuel ratio supplied by the carburetor, the mixture temperature entering the engine block, and the chart given in Figures 3 and 4.

## TANK CAR SHIPMENTS

A report of the petroleum and petroleum products committee of the Atlantic States Shippers Advisory Board states a survey of the petroleum industry operating in the territory covered by the Atlantic States board, shows an indicated increase in the shipment of petroleum in tank cars, during the second quarter of 1930, of substantially 9 per cent over the corresponding quarter of 1929. Railroad service for road haul movements has been generally satisfactory, but there is still room for much improvement in terminal service.

## WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 58)

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w.....Shut down 1,450 ft.
Green et al's No. 1 Wilson, C NE SW Sec. 14-1-12w.....Shut down 4,055 ft.

**GARFIELD COUNTY**

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w .....Drlg. 5,584 ft.
Continental and Barnsdall's No. 1 Brown, CNL SW Sec. 10-26-4w .....Flowed 725 bbls.; total depth 5,973 ft.; plugged back to 5,960 ft.; shot from 5,840-60 ft.; 40 quarts; 735 bbls. completed.
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w .....Fishing 5,580 ft.

**GRADY COUNTY**

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w....Shut down 100 ft.
J. M. Henry et al's No. 1 Abraham, SE cor. NW Sec. 4-5-8w .....Rig.

**GRANT COUNTY**

Baucher et al's No. 1 Deadman, SW SE Sec. 12-28-4w....Drlg. 4,880 ft.
Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w. Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE Sec. 23-26-3w.....Drlg. 5,227 ft.

**GARVIN COUNTY**

Nelson et al's No. 1 Strickland, NE SW Sec. 10-4-3 ....Drlg. 2,510 ft.

**GREER COUNTY**

I. T. I. O. et al's No. 1 fee, C SW NE Sec. 17-6-24w.....Fishing 2,286 ft.

**HARMON COUNTY**

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w .....Shut down 1,510 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w...Shut down 625 ft.

**HARPER COUNTY**

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w.....Drlg. 4,220 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....Drlg. 8,577 ft.

**HASKELL COUNTY**

Mid-Western's No. 1 Polster, C NE SE Sec. 33-10-22.....Underreaming 8-in. csg. 2,375 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e.....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e....Shut down 2,387 ft.
Sanbolse Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

**HUGHES COUNTY**

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11.....Drlg. 450 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12.....1,000,000 ft. gas 2,284 ft.; total depth 2,815 ft.; drlg. 3,218 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10.....Drlg. 3,115 ft.

**KAY COUNTY**

Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w..Spudding.
Waggoner Pet. Co.'s No. 1 Hinkle, C SW NW NW Sec. 3-26-3 .....O.W.D.; total depth 2,430 ft.; drlg. 3,447 ft.
Blankenship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 .....Drlg. 1,470 ft.

**KINGFISHER COUNTY**

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w.....Drlg. 6,395 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w.....Shut down 6,015 ft.

**KIOWA COUNTY**

Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w. Shut down 1,525 ft.

**LEFLORE COUNTY**

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24...Total depth 5,440 ft.; 15,000,000 ft. gas; total depth 5,488 ft.

**LATTIMER COUNTY**

Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Drlg. 125 ft.
Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Drlg. 3,030 ft.

**LINCOLN COUNTY**

Turman Oil Co.'s No. 1 Knox, NE SW Sec. 28-17-2 .....Location.
Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 .....Location.
Magnolia Pet. Co.'s No. 1 Winship, NE SW Sec. 2-13-4...Rig.
Tom Slick Oil Co.'s No. 1 Hammer, SE NW NW Sec. 35-16-2 .....Drlg. 4,790 ft.

**LOGAN COUNTY**

Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w .....Drlg. 3,560 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w. Rig.
Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w..Shut down 3,970 ft.

**McINTOSH COUNTY**

T. C. Young's No. 1 Derrison, Sec. 3-12-15.....Fishing 2,325 ft.
Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

**MURRAY COUNTY**

Chieftain Royalty Corp.'s No. 1 Hendrix, SW SE NW Sec. 27-2-2 .....Shut down 900 ft.

**MUSKOGEE COUNTY**

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19....Shut down 1,011 ft.

**NOBLE COUNTY**

Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w .....Drlg. 960 ft.
Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w..Drlg. 4,676 ft.

**OKFUSKEE COUNTY**

Flynn & Morgan's No. 1 Burton, NE SW SE Sec. 14-13-9..Drlg. 2,055 ft.
Irwin et al's No. 1 Allen, SE SW NE Sec. 15-13-9.....Fishing 3,635 ft.
Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9.....Shut down 2,795 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9.....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10..Shut down 3,661 ft.

**OKLAHOMA COUNTY**

Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w.....Drlg. 4,690 ft.
Cromwell-Franklin's No. 2 Thompson, SW NE Sec. 15-12-3w .....Drlg. 4,215 ft.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w.....Drlg. 5,165 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Drlg. 5,950 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .....Drlg. 6,227 ft.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 8-11-2w..Drlg. 6,558 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....T. D. 6,971 ft.; water; plugging back 6,871 ft.; testing.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-2w .....Top checkerboard 5,400 ft.; drlg. 6,210 ft.

**OSAGE COUNTY**

Western American Oil Co.'s No. 1, NW SE Sec. 28-23-6..Spudding.
Peters Petroleum Co.'s No. 1, SW cor. NE Sec. 5-22-8....Drlg. 2,865 ft.
Kay County Gas' No. 1, C N half NE Sec. 28-24-4.....Drlg. 3,860 ft.
Continental Oil Co.'s No. 1, NW SE SE Sec. 24-24-5.....Shut down 3,549 ft.

**PAWNEE COUNTY**

Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5.....Spudding.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ..Rig.

**PITTSBURG COUNTY**

Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Fishing 3,975 ft.

**POTTAWATOMIE COUNTY**

Keister & Manning's No. 1 Rowlett, SW SE NE Sec. 30-8-4 .....Drlg. 4,468-80 ft.; 225 bbls.; comp.

**ROGER MILLS COUNTY**

Buey & Stone's No. 1 Williams, C SW Sec. 23-12-24w....Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w.....Shut down 2,905 ft.

**SEMINOLE COUNTY**

T. Adkins et al's No. 1 McGilbray, SE NE Sec. 4-8-8.....Drlg. 1,420 ft.
Magnolia and Twin State Oil Co.'s No. 1 Harns, SW NE NE Sec. 8-5-6 .....Drlg. 3,105 ft.
Independent Oil & Gas Co.'s No. 1 Johnson, C NE NE Sec. 33-9-8 .....Drlg. 3,547-61 ft.; 25,000,000 ft. gas mudded; Wilcox 4,426-33 ft., water; total depth 4,456 ft.; abandoned.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5.....Location.

**WASHITA COUNTY**

Southern Inv. Co.'s No. 1 Musie, NW cor. Sec. 10-9-20w..Shut down 280 ft.

**WOODS COUNTY**

Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w .....Drlg. 5,820 ft.
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w .....Shut down 6,790 ft.

**WOODWARD COUNTY**

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .....Shut down 1,387 ft.
Prairie Oil & Gas et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Drlg. 6,735 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

**OKLAHOMA PANHANDLE**

**CIMARRON COUNTY**

Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5....Drlg. 100 ft.

**TEXAS COUNTY**

Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .....Spudded; shut down.
Argus Prod. Co.'s No. 1 Ralston, C SW Sec. 23-6n-14e....Rig.

**SOUTHERN OKLAHOMA**

**ATOKA COUNTY**

Bryant-Croxton's No. 1 Mason, NW SE NW Sec. 4-1s-14..Drlg. 1,580 ft.
Brookshire's No. 1 Guinn, NW cor. Sec. 18-3s-10.....Shut down 100 ft.

**BRYAN COUNTY**

Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Drlg. 400 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-6s-7e...Shut down 385 ft.
Slab Oil Co.'s No. 1 Ryle, NW SE SE Sec. 27-6s-7.....Shut down 1,350 ft.
Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e .....Abandoned 2,200 ft.

**CARTER COUNTY**

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Fishing 2,580 ft.

**CHOCTAW COUNTY**

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6s-19e .....Shut down 1,346 ft.

**COMANCHE COUNTY**

Pelwin Oil Co.'s No. 1 Tafepirdy, C NW NE NE Sec. 5-1s-9w .....Location.

**COTTON COUNTY**

Empire O. & R. Co.'s No. 1 Chambers, NW SE Sec. 8-3s-9w .....Drlg. 4,432 ft.

**JOHNSTON COUNTY**

N. A. Neff's No. 1 Chapman, C SW NW Sec. 20-4s-5.....Location.

**LOVE COUNTY**

Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w...Drlg. 1,520 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1.....Rig.

**MARSHALL COUNTY**

Wheeler et al's No. 1 Taylor, NE NW NW Sec. 8-7s-6e..Drlg. 220 ft.
Aker's et al's No. 1 Spicer, SW SE SE, Sec. 33-5s-7e.....Rig.

**McCURTAIN COUNTY**

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21.. .....Shut down 2,287 ft.

**STEPHENS COUNTY**

C. W. Willis' No. 1 Fair, SE SW SE Sec. 33-1-8w .....Drlg. 1,800 ft.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n.....Rig.
Wirt Franklin Petroleum Corp.'s No. 1 McPhail, NW SE Sec. 1-2s-7w .....Drlg. 4,152 ft.

**TILLMAN COUNTY**

Bridwell's No. 1 Pan-te-chee, NE SE Sec. 4-4s-16w.....Shut down 835 ft.
Flake's No. 1 Barba, NE SE NE SE Sec. 19-1s-16w.....Shut down 1,185 ft.
Allen Brothers' No. 1 Howell, SW NE Sec. 13-1-17w.....Shut down 1,040 ft.
Landfair et al's No. 1 Smith, SE SW SE Sec. 6-2s-16w...Abandoned.

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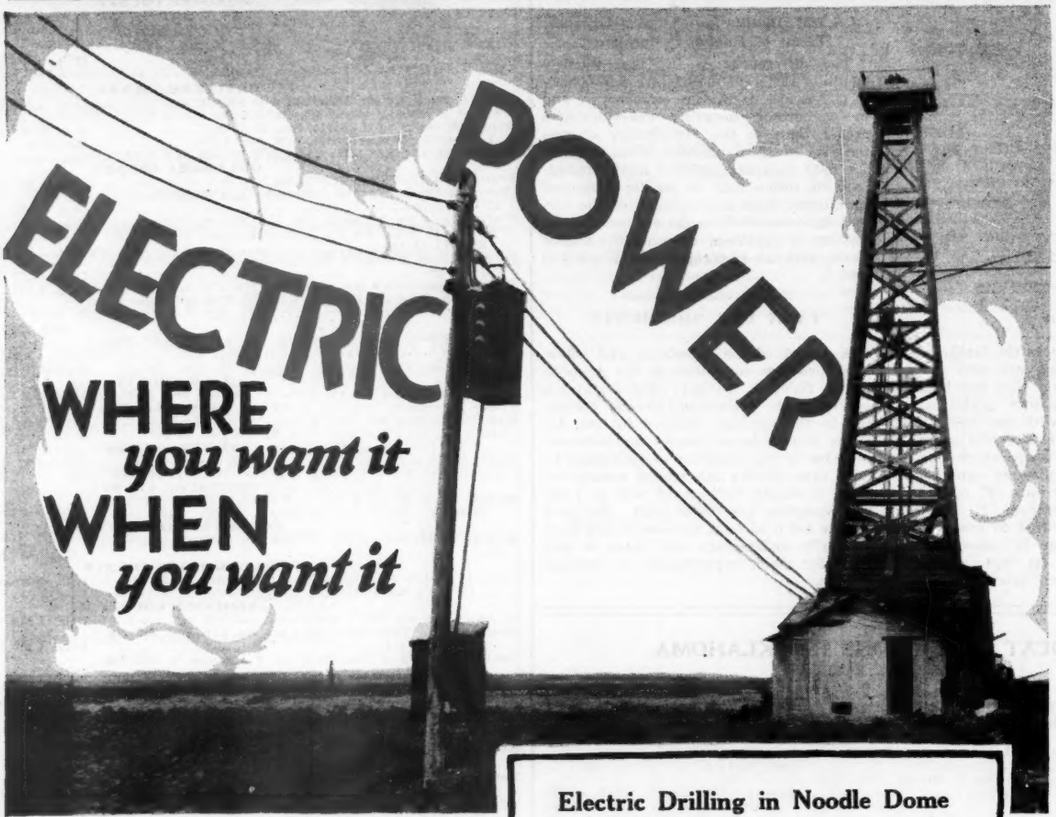


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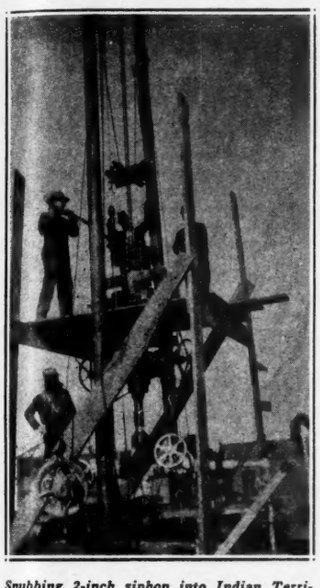
# IMPROVED METHODS OF TUBING WELLS DECLARED TO BE NEARLY FOOLPROOF

By H. C. Otis
The Southern States Co., Inc.

At the fall meetings of the American Petroleum Institute and the American Institute of Mining and Metallurgical Engineers held in Tulsa last October the paper on Methods of Tubing High-Pressure Wells by the writer was received with a great deal of interest by the engineers and production men who heard it and to satisfy a demand for information as to what has been actually accomplished since that time in the use of this method this brief review of work done is given.

This process—the running of tubing against pressure without permitting the loss of any oil or gas—was developed in



*Snubbing 2-inch siphon into Indian Territory Illuminating Oil Co.'s No. 1 McCormick well, Perry, Okla., against a well pressure of 950 pounds.*

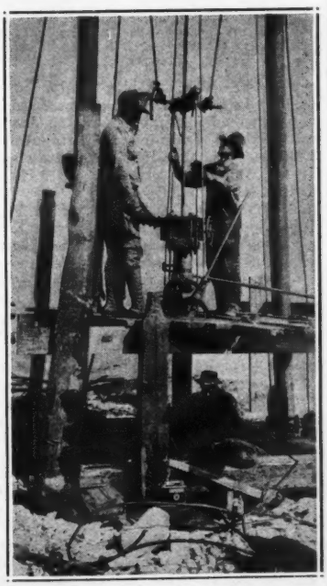
Louisiana by the Southern States Co. about two years ago. From a rather crude beginning, the equipment has been developed to the point where, when used by trained crews, it is nearly foolproof. This is demonstrated by the fact that nearly 500 wells, some with working pressures as high as 1,350 pounds per square inch, and with volumes as high as 75,000,000 feet of gas and 62,000 bbls. of oil, have been successfully tubed without a single slip or accident.

In Louisiana the work done by this company has consisted mostly of the tubing—or siphoning—of gas wells. The Richland gas field in that State gave the Southern States Co. its first real start. In that field volumes are large, a large percentage of the wells having volumes in excess of 50,000,000 feet, and working pressures of 1,000 pounds or more. While the bringing in of wells through tubing has been practiced to a limited extent, it has not in many instances been found satisfactory because of the loose porous sand. This same loose sand makes foolhardy any attempt to run tubing with the wells blowing. So far as is known, the early wells in this area were the first large volume high-pressure wells to be tubed without permitting the loss of any production.

From Richland, one crew was moved to Duval County, Texas, where several wells were tubed in a similar manner. Early last winter this crew moved to Oklahoma, where it and one other crew have been operating since, with the exception of a short time during which one crew tubed a few wells in the Van, Tex., Field and later in the Elyria district, Kansas. About the first of this year a crew was sent to the Yates, Tex., Field, where it is still working. This crew, at the very outset, was given what was then a new venture in the installation of tubing—the running of a tapered string of 2-inch, 3-inch and 4-inch into a 35,000-bbl. well with 600 pounds pressure and plenty of poisonous sulphur gas. Because of the high pressure compared to the depth of the well it was necessary to snub almost the entire string, and to anchor it in place after being landed. The operation was, however, successfully completed without the loss of a gallon of oil. Since then many combinations of tubing diameters have been run in that field and others—the bottom diameter in once instance being three-fourths inch tubing. The success with which these tapered strings are operating would seem to indicate that a large majority of the flow strings of the future will be of the tapered design. It is possible that a tapered string of tubing will be run against pressure in the Oklahoma City Field in the near future in an attempt to reduce the tremendous waste of gas prevalent there. Tapered siphons are being experimented with in Louisiana.

Another experiment is soon to be made in the Panhandle—this to be an attempt to clean cavings out of the bottom of several gas wells by running tubing against pressure, opening this tubing just above bottom, introducing a little water, and then blowing mixed water and cavings out through the tubing.

One service in addition to the running of tubing which is being furnished is the plugging of tubing already in a well in the bottom joint and then snubbing the tubing out of the hole to allow the running of pipe of different diameter. Both tapered and straight strings have been plugged and snubbed out in this manner, the only production lost being that which was trapped in the tubing at the time it was plugged. A further development of the packer used in this work will soon permit the plugging and unplugging of a string of tubing at any desired point. This should prove of considerable value in the lowering and raising of tubing in flowing wells in attempts to find the



*Tapered string of tubing being installed in Shell Petroleum Corp.'s No. 9 Tippett well, Yates Pool, Pecos County, Texas.*

point where the best gas oil ratio may be secured. If it is desired to raise a flow string two joints, the tubing is plugged at any point below the top two joints, the string is raised through control heads the desired distance and then unplugged—all against pressure and without the loss of any production.

In thick producing sands such as those found in some areas in California, this should be of especial value not only in

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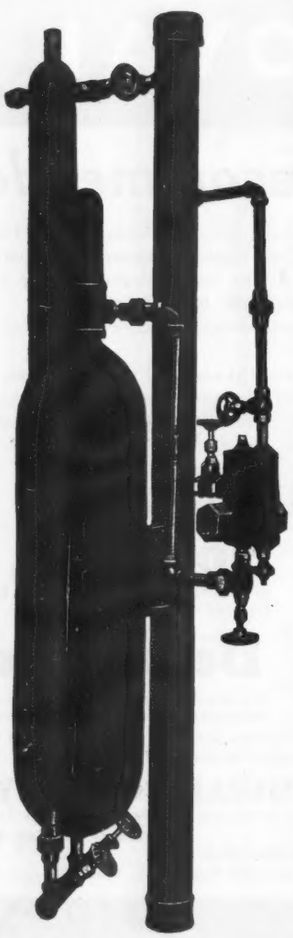

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A & B Drilling Co., Oklahoma City
Capitol Drilling Co., Oklahoma City
Prince & Prince, Electra, Texas
Clark & Cowden, Duncan, Okla.
Independent Oil Co., Oklahoma City
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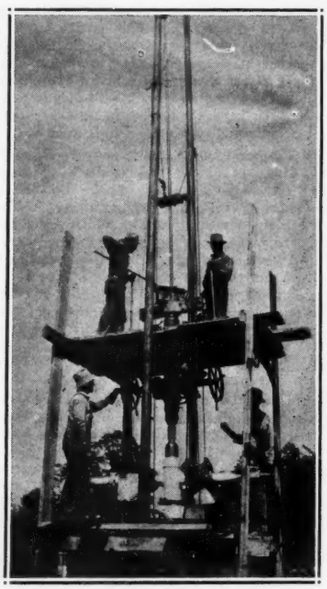
## BADGETT STEAM LUBRICATOR COMPANY

CHICKASHA, OKLAHOMA


determining proper flow levels but also in locating points of water entry, etc.

Because of the large number of wells tubed, under many varied conditions, the company is in an excellent position to gather data relating to the effect of tubing design in the operation of flowing wells and high and low pressure gas wells. A well-known engineer is being added to the staff of the Southern States Co. primarily to gather and interpret this data. It is anticipated that within a year a valuable collection of data covering the results of the use of tubing in many fields and under almost every conceivable condition will have been made. The gathering and studying of this data should soon place the company in an excellent advisory capacity in the use and design of flow strings and siphons.

The control equipment used consists of control heads of a standard make, modified to suit the varied requirements of



*Installing 1¼-inch upset siphon against 1,050 pounds pressure in Southern Carbon Co.'s No. 1 Legola well, Richland Parish, Louisiana.*

the work. The snubbing equipment is essentially the same as that described in a paper read last fall before the American Institute of Mining and Metallurgical Engineers and the Mid-Continent division of the American Petroleum Institute at Tulsa, and published in The Oil and Gas Journal October 3, 1929, Page 169, though some changes and improvements have been made. Trucks, geared high for speed on the road—for moves of 200 miles are not uncommon—and equipped with specially designed oil field wenches, furnish the motive power not only for carrying the men and equipment from well to well and field to field, but also for handling the tubing where the effective weight of the string does not exceed 30,000 pounds. Considerable time and money are being continually spent in attempts to make the equipment still safer and the service more complete. Basic patents have been applied for on both the process and equipment. Some of these patents are now in the process of being granted.

Of the men hired, only about one out of every four turns out to be mentally and physically fitted for the work. The working unconcernedly around and over well fittings under 1,000 or more pounds pressure requires a type of man not always easily found. These men must be able to think in terms of pressure—not only of what that tremendous energy would do to them and their equipment if it were suddenly released, but also of how they can harness that energy in a way that will make their work faster and lighter. One further requisite is that they take no unnecessary chances with either the wells, equipment, or their own lives. Crews, as well as foremen, are carried on straight time and on a pay schedule considerably higher than that customary in the field. This has been found necessary to attract and hold the right kind of men. Extra men are continually carried in training, not only to form the basis of new crews, but also to use as replacements in case of sickness, etc.

The investment in equipment necessary to safely and adequately handle the varied conditions and types of tubing work, the money necessary for the continual experimenting in new equipment, the long moves that are at times required with high-priced crews on straight time, the expense of gathering and studying the effects of tubing under different working conditions, all necessitate prices which might appear high. As in every new specialty, costs at the outset must be high. An observer, watching a string of tubing quietly and easily being snubbed into a high-pressure, large volume well, would probably consder a price of over a few hundred dollars as excessive. That is, however, not taking into consideration the cost of development, of training men, of carrying equipment for special work, and of the always present overhead. The company is today doing work which a year ago had never been attempted nor considered possible, but is doing it for a price considerably less than it was charging six months ago. As further economies are effected, either through improvements in equipment or large scale operations, the operators for whom the work is being done will be given the benefit through reduced prices.

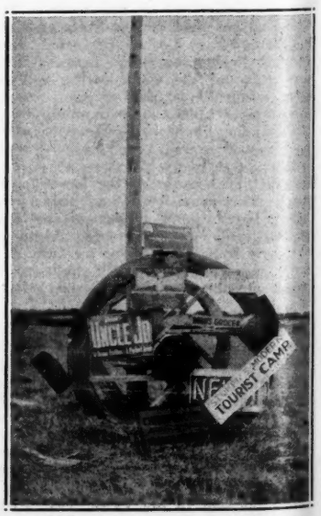
The work is being done on a contract basis, the price depending upon the well pressure, depth, location and design of tubing string. Prices charged range from $350 to $1,250 or more per well.

Engineers generally have agreed on the higher efficiency, where gas is the flowing agent, of tubing as compared to surface chokes alone. Much, however, remains to be learned about the use of tubing under pressure—proper diameters for various well conditions, the relative value of tapered and straight strings, proper flow levels, bottom hole chokes, etc. The Southern States Co., by carefully checking and following up the work which it does, hopes soon to be in a position to give a complete tubing service—this service to include not only the handling of tubing under pressure, but also the advising as to tubing programs and tubing operation.

### ISRAEL CULP DEAD

OIL CITY, Pa., May 17.—Israel Culp, well-known contractor in the oil fields of this district and for 15 years a pipe line inspector for the Pure Oil Co., died at the home of his daughter, Mrs. James M. Light of West Bloss Street, Titusville, after a long illness.

### SIGNS ALONG HIGHWAYS

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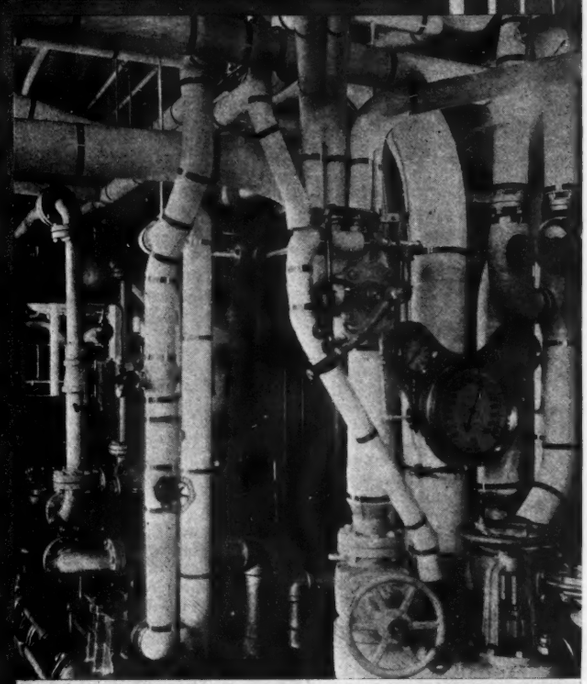

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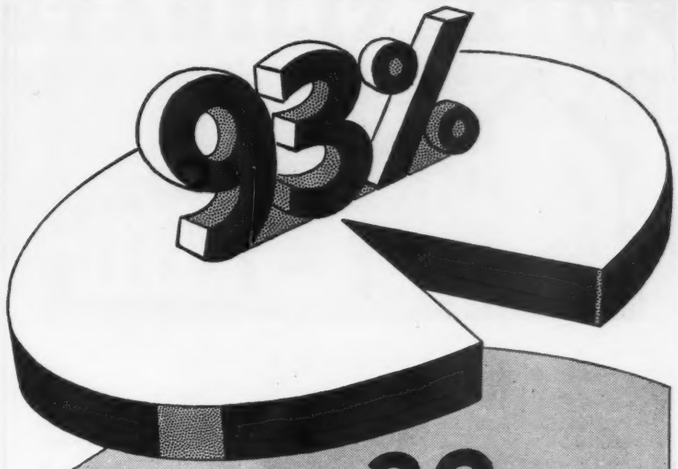


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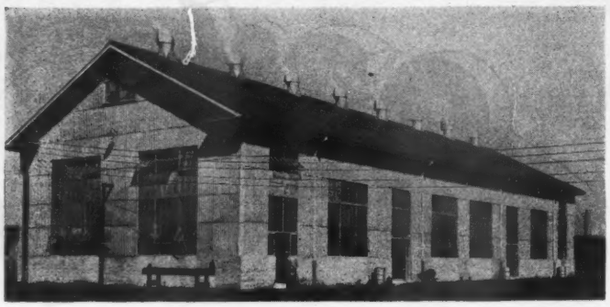

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# NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

## TEXAS PANHANDLE
### For the Week Ending May 7

### Carson County

Danciger Oil & Refining Co.'s No. 2 B. F. Byrum, 990 feet north and 330 feet east of the SW cor. of the SW of Section 188, Block 3, I.&G.N. Sweeney and others' No. 1 N. S. Locke, 164 feet south and east of the NW cor. of Section 57, Block 7, I.&G.N.

### Gray County

Clayton-Key Oil Co.'s No. 2 E. Key, 1,950 feet north and 330 feet west of the most southerly SE cor. of Section 1, B.&B., being 330 feet south and west of the NE cor. of the 42-acre lease. Shamrock Oil & Gas Co.'s No. 1 Worley & Reynolds, 330 feet south and west of the NE cor. of the W half of the SE of Section 84, Block 3, I.&G.N.

### Hutchinson County

Skelly Oil Co.'s No. 2 R. G. Byrd, 1,320 feet south and 7,209 feet east of the NW cor. of the W. M. Cole Survey.

### Moore County

Shamrock Oil & Gas Co.'s No. 1 J. H. Shory, 330 feet south and east of the NW cor. of the NE of Section 187, Block 3-T, T.&N.O.

### Wheeler County

Upham Gas Co.'s No. 1 O. Hasher, at the center of the SE of the SW of Section 69, Block 17, H.&G.N.

## NORTH CENTRAL AND WEST TEXAS

### Archer County

Barnsdall Oil Co.'s No. 2 T. B. Wilson-D, 150 feet south and 450 feet east of the NW cor. of 40-acre lease "D" and located in the B. J. Howard Survey A-179. L. T. Burns' No. 1 L. F. Wilson-R, 1,470 feet south and 1,050 feet west of the NE cor. of Lot 1, Section 108, A.T. N.C.L. C. P. Burton's No. 1 L. F. Wilson-A, 150 feet south and 400 feet east of the NW cor. of the north 70 acres of the east 189 acres of the L. F. Wilson 1,280-acre tract out of the William Walker Survey A-660. L. Hodge and others' No. 1 C. A. Mangold, 900 feet south and 150 feet west of the NE cor. of Section 8, Mangold Subdivision. Underwood Drilling Co.'s No. 1 C. A. Mangold, 150 feet south and west of the NE cor. of Section 4, Mangold Subdivision. Bridwell Oil Co.'s No. 2 R. W. Fails, 150 feet south and 450 feet west of the NE cor. of the south 30 acres of the R. W. Fails 122.5-acre tract out of Section 2,-419, T.E.&L. Bridwell Oil Co.'s No. 3 R. W. Fails, 150 feet south and 810 feet west of the NE cor. of the south 30 acres of the R. W. Fails 122.5-acre tract out of Section 2.419, T.E.&L. L. T. Burns' No. 9 R. W. Fails, 750 feet north and 810 feet west of the SE cor. of 42.5-acre lease out of Section 2.419, T.E.&L. L. T. Burns' No. 10 R. W. Fails, 450 feet north and 810 feet west of the SE cor. of 42.5-acre lease out of Section 2,-419, T.E.&L.

Fain-McGaha Oil Corp.'s No. 1 Dr. G. B. Hamilton, 1,200 feet south and 1,000 feet west of the NE cor. of Section 5, B.B.B.&C, A-46. Golding & Cochran's No. 1 E. Kelly, 150 feet south and west of the NE cor. of Section 66, Club Ranch Subdivision. E. B. Madden's No. 1 O. L. Kunkel, 450 feet south and 150 feet west of the NE cor. of the east 20 acres of the north 40 acres of the south 80 acres of the O. L. Kunkel 160-acre tract out of Section 2,419, T.E.&L. J. H. Massie's No. 10 J. T. Richardson, 150 feet south and east of the NW cor. of Section 14, South Anderson Ranch Subdivision, and located in Section 2,419, T. E.&L. M. & V. Oil Co.'s No. 6 H. Kunkel, 750 feet north and 450 feet west of the SE cor. of 40-acre lease out of the G. W. Stell Survey A-381. Pandem Oil Corp.'s No. 1 L. L. Hudson-D, 150 feet north and east of the SW cor. of the east 50 acres of the north 100 acres of Section 83, Club Ranch Subdivision. Perkins & Cullum's No. 1 Falls County School Land, 150 feet north and east of the SW cor. of the north 39 acres of the east 50 acres of Section 8, Falls County School Land, A-130. Shell Petroleum Corp.'s No. 3 W. R. Duprest, 150 feet north and 744 feet west of the SE cor. of the east 60 acres of the north 110 acres of Section 2,490, T.E.&L. Virgil Oil & Gas Co.'s No. 6 H. F. Harmel, 150 feet south and 1,050 feet east of the NW cor. of the east 20 acres of the north 50 acres of the H. F. Harmel 210-acre tract out of Section 2,490, T.E.&L. Virgil Oil & Gas Co.'s No. 7 H. F. Harmel, 750 feet south and 250 feet west of the NE cor. of the H. F. Harmel 210-acre tract out of Section 2,490, T.E.&L.

### Baylor County

Grisham & Barnsdall Oil Co.'s No. 3 W. H. Portwood (Harry), 761 feet north and 150 feet east of the SW cor. of the SE of Section 1,281, T.E.&L.

### Brown County

Anzac Oil Corp. and others' No. 1 Mrs. A. Armstrong, 660 feet south and 3,763 feet west of the NE cor. of Section 1, H.&G.N., A-1,217. Phillips Petroleum Co.'s No. 12 C. Newsome, 1,000 feet south and 800 feet east of the NW cor. of the G. R. Davis Survey A-2,106 and located in the H. Presslar Survey A-2,040. H. H. Simons' No. 1 S. C. Kessler, 150 feet north and 1,304 feet west of the SE cor. of the north half of the SW of Section 42, H.T.&B. M. E. Bishop and others' No. 1 B. S. Boysen, 150 feet NW of the SE line and 1,350 feet NE of the SW line of the P. Mangle Survey 604. Tex Cal Oil Co.'s No. 4 J. C. Martin and others-B, 150 feet south and 1,213 feet east of the most westerly NW cor. of Section 11, H.T.&B. Tex Cal Oil Co.'s No. 2 W. A. McEntire, 550 feet south and 1,200 feet east of the NW cor. of Section 11, H.T.&B., being 150 feet north and west of the SE cor. of lease.

### Callahan County

J. W. Ducker and others' No. 1 B. E. Higgins, 450 feet north and east of the SW cor. of the NW of Section 39, Deaf & Dumb Asylum Land. Lewis Production Co.'s No. 1 M. Alexander, 2,800 feet north and 1,480 feet west of the SE cor. of Section 23, E.T.R.R. John Lieiner's No. 1 J. O. Hall, 200 feet south and west of the SE cor. of the R. A. Pace Survey No. 232 and located in the J. W. Jones Survey. E. Lillius' No. 1 J. Robinson, 850 feet north and 450 feet east of the SW cor. of the SE of the NE of Section 47, Deaf & Dumb Asylum Land. McCowan & Richardson's No. 1 F. V. Baum, 300 feet south and 1,470 feet west of the NE cor. of the Victoria County School Land No. 202. F. M. Taylor's No. 1 H. L. Biggerstaff, 720 feet south and 1,100 feet east of the NW cor. of Section 312. S.P.R.R. Wakefield & Curry's No. 1 M. P. McDonnell, 1,250 feet north and 150 feet east of the SW cor. of the J. M. Swisher Survey No. 334.

### Clay County

Phillips Petroleum Co. and others' No. 1 Martin & Walker, 330 feet south and east of the NW cor. of the SW of Section 61, H.T.&B., A-230.

### Coleman County

Arcadia Refining Co. and others' No. 1 C. E. Burns, 150 feet south and 750 feet east of the NW cor. of Section 13. A. White Survey. Atlantic O. P. Co.'s No. 4 M. T. Overall-B, 500 feet south and 2,850 feet east of the most westerly NW cor. of Section 9, Block 1, G.H.&H., being 200 feet north and east of the SW cor. of 40.2-acre lease. Lloyd Oil Corp.'s No. 10 R. G. Bartholomew, 780 feet north and 560 feet east of the SW cor. of the W. Farris Survey No. 279. L. Smith and others' No. 3 S. E. Switzer, 2,500 feet north and 1,700 feet east of the SW cor. of the W. Farris Survey No. 279. being 600 feet NW of their No. 2 and 380 feet east of the west line of lease.

### Cooke County

Danciger Oil & Refining Co.'s No. 1 W. R. Cannon, 150 feet south and west of the NE cor. of the T. J. Hutchinson Survey A-492. Lesh & McCall's No. 1 H. Y. Gibson, 150 feet south and east

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Boston Insurance Co.
Caledonian Insurance Co.
California Insurance Co.
Camden Fire Ins. Association
Carolina Insurance Co.
Central States Fire Ins. Co.
Citizens Insurance Co.
City of New York Insurance Co.
Columbia Insurance Co.
Commerce Insurance Co.
Commercial Union Assurance Co.
Commercial Union Fire Ins. Co.
Commonwealth Ins. Co.
Concordia Fire Insurance Co.
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Home Fire & Marine Ins. Co.
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Insurance Co. of North America
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Jersey Fire Underwriters
Lincoln Fire Insurance Co.
Liverpool & London & Globe Ins. Co.
Mechanics Insurance Co.
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of the NW cor. of the north 75 acres of the E. A. Clubb Survey A-279.

**Denton County**

Owen-Slone Oil Co.'s No. 1 G. E. Light, 2,486 feet north and 1,049 feet west of the SE cor. of the Joseph Harris Survey (2-459).

**Ector County**

Cosden Oil Co.'s No. 4 University-B, 1,650 feet south and 1,320 feet west of the NE cor. of Section 2, Block 35, University Land. Landreth Production Corp.'s No. 4 University-S, 990 feet south and 1,320 feet west of the NE cor. of Section 2, Block 35, University Land. Sunray Oil & Llano Oil Co.'s No. 1 E. J. Jones, 2,330 feet south and 440 feet west of the NE cor. of Section 6, Block 44, Township 2s, T.&P.

**Grayson County**

F. H. E. Oil Co.'s No. 2 Finke, 740 feet south and 1,211 feet east of the NW cor. of the F. Finke 140-acre tract out of the J. Hull Survey A-562.

**Loving County**

Dixie Oil & Phillips Petroleum Co.'s No. 1 W. D. Johnson, 1,320 feet south and west of the NE cor. of Section 38, Block 54, Township 2, T.&P. Miller-Burge & Healy's No. 1 N. F. Chapman, 225 feet SE of the NW line and 825 feet NE of the SW line of Section 71, Block 1, W.&N.W.R.R.

**Montague County**

Bridwell Oil Co. and Continental Oil Co.'s No. 9 H. C. McGaughy, 200 feet north and 1,744 feet east of the SW cor. of the C. Chacon Survey A-143. United Production Co.'s No. 1 Mrs. M. F. York and others, 1,362 feet north and 1,404 feet west of the SE cor. of the Mrs. M. F. York and others 150-acre tract out of the F. Robertson Survey A-620.

**Palo Pinto County**

B. Wickens and others' No. 1 J. L. Cunningham, 400 feet south and 990 feet east of the NW cor. of Section 53, Lease 2, Burleson County School Land.

**Pecos County**

Cardinal Oil Co.'s No. 8 Mrs. F. E. Forborg, 150 feet north and east of the SW cor. of Section 539, Arnold & Barrett Survey A-3. Southern Crude Oil Purchasing Co.'s No. 6 J. H. Tippett-A, 150 feet north and west of the SW cor. of Section 539, Arnold & Barrett Survey A-3 and located in Section 61, Block 194, G.C.&S.F. Riser & White's No. 1 W. D. Riser, 2,297 feet north and 997 feet west of the SE cor. of Section 24, Block 12, H.&G.N.

**Reagan County**

Big Lake Oil Co.'s No. 5-C University, 625 feet north and 250 feet east of the SW cor. of Section 25, Block 9, University Land.

**Reeves County**

California Co.'s No. 1 Kloh & Rumsey, 1,650 feet north and west of the SE cor. of Section 13, Block 54, Township 4, T.&P.

**Shackelford County**

Merrick & Lamb's No. 6 J. B. Matthews-B, 165 feet south and 150 feet east of the NW cor. of the NE of the SE of Section 32, Block 10, E.T.R.R.

**Stephens County**

Arrowhead Oil Co.'s No. 6 H. S. Post, 150 feet south and 330 feet west of the NE cor. of the south half of the SE of Section 32, Block 6, T.&P.

**Wichita County**

Comac Drilling Co. and Cullum's No. 1 M. A. Love, 557 feet north and 1,130 feet east of the SW cor. of the north 48 acres of the south 100 acres of the M. A. Love tract out of the W. S. Kennard Survey A-171. Everts Drilling Co.'s No. 1 C. W. Moeller, 150 feet north and west of the SE cor. of the SE of Section 291, Waggoner Colony Subdivision. Lambert & Trout's No. 1 W. W. Overby, 150 feet south and west of the most easterly NE cor. of the south 60 acres of the W. W. Overby tract out of the J. M. Sharp Survey A-262. C. P. Sheldon's No. 1 C. W. Moeller, 150 feet north and 450 feet west of the SE cor. of the NW of Section 291, Waggoner Colony Subdivision.

**Wilbarger County**

Fain-McGaha Oil Corp.'s No. 20 W. T. Waggoner-L, 1,050 feet south and 1,505 feet west of the NE cor. of lease "L" out of Section 21, Block 4, H.&T.C. The Texas Company's No. 379 W. T. Waggoner, 990 feet south and 938 feet west of the NE cor. of Section 4, Block 13, H.&T.C. The Texas Company's No. 380 W. T. Waggoner, 330 feet south and 938 feet west of the NE cor. of Section 4, Block 13, H.&T.C. Waggoner Refining Co.'s No. 12 W. T. Waggoner-P, 150 feet north and 1,677 feet west of the SE cor. of Section 50, Block 2, H.&T.C.

**Young County**

Brihill Oil Co.'s No. 2 F. A. Robinson, 350 feet north and 200 feet east of the SW cor. of the south 20 acres of the F. A. Robinson 74-acre tract out of the H. F. Peters Survey A-1,339. Fisher & Staley's No. 1 Carpenter, 930 feet north and 1,048 feet west of the SE cor. of Section 157, T.E.&L., being 150 feet south and east of the NW cor. of Block 6, and located on Lot 2, Bloodworth's 2nd Addition, Town of Olney. Hunter Oil Corp.'s No. 3 H. Benson-A, 708 feet south and 1,390 feet east of the NW cor. of Section 157, T.E.&L., being 108 feet south and 450 feet west of the NE cor. of Lease "A," Hunter Oil Corp.'s No. 1 J. M. Bloodworth, 1,420 feet north and 1,722 feet east of the SW cor. of Section 157, T.E.&L., being 450 feet south and 150 feet west of the NE cor. of 35-acre lease. Moore & Blean's No. 1 Ellis, 1,600 feet north and 645 feet west of the SE cor. of Section 157, T.E.&L., being 150 feet north and east of the SW cor. of Block 12, and located on Lot 3, Olney Developing Co. Addition, Town of Olney. Perkins & Cullum's No. 8 J. L. Lemmond, 230 feet north and 150 feet west of the SE cor. of the north 80 acres of the J. L. Lemmond tract out of Section 1, B.B.B.&C., A-35. Perkins, Cullum & Pace's No. 1 Mrs. Sadau, 1,630 feet north and 955 feet west of the SE cor. of Section 157, T.E.&L., being 180 feet north and 100 feet east of the SW cor. of Block 13, and located on Lot 2, Olney Development Co. Addition, Town of Olney. Staley & Wynne's No. 1 Cooper, 930 feet north and 1,286 feet west of the SE cor. of Section 157, T.E.&L., being 150 feet south and east of the NW cor. of Block 7 and located on Lot 10, Olney Development Co. Addition, Town of Olney. D. L. Wolf's No. 6 R. E. Hill, 1,350 feet south and 1,625 feet west of the NE cor. of Section 195, T.E.&L., being 461 feet south and 150 feet west of the NE cor. of his 22.2-acre lease. Wootten & Reed's No. 1 H. F. Haygood, 150 feet south and 700 feet east of the NW cor. of the north 85 acres of the H. F. Haygood 190-acre tract out of Section 1,468, T.E.&L. Atlantic Oil Purchasing Co. and Christie's No. 3 M. Jarnigan-B, 200 feet NE of the SW line and 1,008 feet SE of the NW line of the NE 50 acres of the SW 100 acres of the J. Orrick Survey A-217. Bryson Oil & Gas Co.'s No. 1 C. W. Johnson, 150 feet SW of the NE line and 150 feet east of the west line of the E. Johnson Survey A-2,257.

Long and others' No. 1 R. M. Williams-C, 90 feet SW of the bank of the Brazos River and 1,244 feet SE of the NW line of the R. O. Woolfork Survey No. 15, A-1,279. McLester Oil Co.'s No. 1 E. L. Burns, 330 feet south and west of the NE cor. of the E. L. Burns 9.62-acre tract out of the P. Pier Survey A-219. Shaw Oil Corp. and Lynch's No. 1 J. Kisinger, 500 feet SW of the SW line of Section 3, B.B.B.&C., A-27 and 2,200 feet NW of the NW line of the W. J. Orrick Survey A-217 and located in the John Conner Survey A-57, being 500 feet north and 200 feet east of the SW cor. of their 21-acre lease.

**CORRECTIONS**

**Brown County—**

E. L. Smith Oil Co.'s No. 1 J. C. Suttles, 1,087 feet south and 720 feet east of the NW cor. of the J. C. Suttles 100-acre tract out of the J. Padillo Survey No. 646.

**Eastland County—**

J. L. Elliott's No. 1 Liberty Land Co., 175 feet north and 200 feet east of the SW cor. of the east 60 acres of the north 120 acres of the east half of Section 52, Block 4, H.&T.C.

**Pecos County—**

Cardinal Oil Co.'s No. 7 Mrs. F. E. Forborg, 150 feet north and 432 feet east

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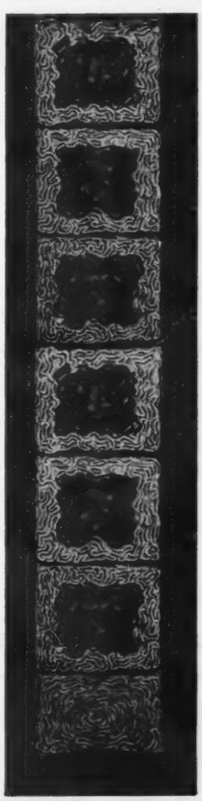

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Durametallic Corp., 707 Guaranty Trust Bldg., Detroit, Mich.
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of the SW cor. of Section 539, Arnold & Barrett Survey A-3.

**Wilbarger County—**

Waggoner Refining Co.'s No. 11 W. T. Waggoner-P, 1,900 feet south and 1,300 feet west of the NE cor. of Section 35, Block 2, H.&T.C.

**Young County—**

C. W. Clark's No. 1 Wieburg, 2,461 feet south and 1,200 feet west of the NE cor. of Section 157, T.E.&L., being 150 feet south and east of the NW cor. of Block 11, and located in Lot 4, Olney Development Co. Addition, Town of Olney. T. F. Hunter and others' No. 1 Leberman, 2,461 feet south and 1,550 feet west of the NE cor. of Section 157, T.E.&L., being 150 feet south and west of the NE cor. of Block 39, Olney Development Co. Addition, Town of Olney. E. B. Madden's No. 1 E. B. Madden, 2,461 feet south and 825 feet west of the NE cor. of Section 157, T.E.&L., being 150 feet south and east of the NW cor. of Block 10, and located on Lot 7, Olney Development Co. Addition, Town of Olney.

## New Production Peak In 1932 Is Predicted For Allegany Field

OLEAN, N. Y., May 17.—"Total producers' runs in the Allegany Field for April averaged 9,861 bbls. daily comparable with 9,092 bbls. for March and 9,170 bbls. for February and 8,672 bbls. for January. While April's runs show about 9 per cent increase over March, they equal 14 per cent over January, which month's production was used as the basis to determine the figures used as the estimated daily average production for the Allegany Field for 1930. It is now evident that the 11,000 bbls. heretofore set as the daily average will, undoubtedly, be exceeded.

**Average of 12,500 Bbls.**

"Some operators are estimating that the correct figures will be closer to 12,500 bbls. While no decline is anticipated this year, it is admitted that the total increase and the daily average will be entirely dependent upon the pressures under which the present five spot developments are operated, together with the additional drilling that will be done during the next three months. The work later in the year, while not affecting 1930 production, will show results in 1931 production.

"Allegany crude is now being stored by two of the buyers. The anticipated increase above the estimates heretofore set does not present a healthy condition. There is too much oil being produced at the present time and the recent drastic cut of 25 cents per barrel has been accepted by the more careful producers as indicative of other cuts that can be anticipated if there is not a letup in the development programs. A number of the larger producers in this area have proceeded very conservatively for more than a year and if all of the new programs had been followed through in like manner, the present overproduction would not have been experienced.

"The New York State Producers Association has not been active for a considerable period. This has resulted in lack of contact between the interests, who have proceeded without exact knowledge of the various drilling programs. There is some effort now being made to revive interest in the association since many producers feel that conservation and restriction should be directed entirely by them and not by other sources.

**Sinclair's Expansion**

"Further construction work is being planned for the Wellsville plant of the Sinclair Refining Co., who are now arranging to install a second 7,500-bbl. pipe still and to convert the 3,000-bbl. pipe still, erected in 1926, into a rerunning still. When all these programs are completed late this year, this plant will have a crude charging capacity of 15,000 bbls. daily, or practically equal to the present daily average production for the entire Allegany Field as set for 1931. Whether this amount of crude could be refined and successfully marketed by a plant located at Wellsville presents an interesting problem. The construction work, however, is one of the most encouraging items now before the Allegany producers, particularly since the Vacuum has not been taking all of their daily purchases in the Allegany Field to their Olean plant daily.

**New Peak in 1932**

"The banking interests and others who are deeply studying this situation believe that the daily production by 1932 will exceed the highest production in the history of the Allegany Field, which should be in every way beneficial for the producers provided the market for the oil does not go down so low that developments cannot be carried on at a profit. This hazard will, no doubt, result in careful review of every drilling program, aiming to at once reduce the production and bring it within the limits of the amount that can daily be run by the three refineries who use this grade of crude.

"The operators in the Allegany Field are watching with interest the developments in Bradford, realizing that their problems are closely related to those in that area. They are hopeful that some steps will be taken to reduce the Bradford production so as not to further complicate their own problems."

## LEE C. MOORE ENJOYS WORK IN LABORATORY

As one advances in years if he is of a philosophical turn of mind he ceases to worry about the every day affairs of life and devotes his time, and perhaps his money, to the pursuit of some idea, which in the parlance of the street is known as a hobby.

Lee C. Moore, former chairman of the Mid-Continent section of the American Society of Mechanical Engineers and more recently treasurer of the Tulsa Chamber of Commerce, is a man of this type and his hobby is steel.

As a youth in the Pittsburgh iron district he entered the steel and iron industry and has grown up and been connected with it ever since and now in his seventy-seventh year he is still actively interested in research in this field and for this purpose has established a small laboratory in Tulsa where he is finding much to keep him busy, and at the same time is assisting many younger men in their work.

Mr. Moore was for many years with the Trenton Iron Works and later with the firm of John A. Roebling Co., builders of the Brooklyn Bridge, and many other structures of a like nature. At the time the Brooklyn bridge was built he advanced a theory regarding the "working" of the metal forming the cables that has since been confirmed by actual experience and more recent laboratory research work.

The laboratory Mr. Moore has established in Tulsa, while small, is quite complete and he takes great pride in his ability to polish and etch samples of all classes of iron and steel and then show by examining same under powerful microscopes the difference in structure making up the specimens.

Mr. Moore is always glad to have his friends visit his laboratory and bring to him their problems and his talks on iron and steel are both instructive and enlightening and all who know him join in wishing him many years of continued use of this laboratory.

## THERMAL PROPERTIES

Thermal properties of Petroleum Products prepared by C. S. Cragoe of the Bureau of Standards can now be obtained in printed form. If the petroleum industry in the last 25 years had possessed as much information on the thermal properties of its fluids as was made available on steam and ammonia by Regnauld in 1862 there would have been a great economic saving in more efficient methods and apparatus, this report states. The report received financial assistance from the research fund of the American Petroleum Institute donated by John D. Rockefeller.

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(Continued from Page 134)

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P. G. Weidner, chief engineer.
Moon Gasoline Co., 624 S. Cheyenne Ave., Tulsa:
P. D. Bragg, Bixby, Okla.
Charles Bender, Muskogee, Okla.

Mc

McMan Oil & Gas Co., Drew Bldg., Tulsa:
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A. T. Campbell, Burkburnett, Tex.
H. U. Jarrett, Tonkawa, Okla.
Carl Law, Desdemona, Tex.
McPherson Oil & Gas Development Co., United Life Bldg., Salina, Kans.:
C. J. Fowlston, McPherson, Kans.

N

Nancy E. Gould & Son., R.F.D. 6, Butler, Pa.:
Floyd B. Gould, chief engineer.
National Supply Co. of Texas, Fort Worth, Tex.:
A. V. B. Candler, chief engineer.
Neal Gasoline Co., 507 Atlas Bldg., Tulsa:
Luke Crupper, Box 263, Copan, Okla.
L. W. Blair, Box 186, Osage, Okla.
Nolan & Lamberton, 212 S. Olympia, Tulsa:
W. E. Russell, R.R. 4, Oblong, Ill.
North American Consolidated, 351 California St., San Francisco, Calif.:
A. B. Jenks, Taft, Calif.
North Penn Gas Co., 103 Mill St., Port Allegany, Pa.:
W. D. Clark, Roulette, Pa.
L. F. Schlosser, Shinglehouse, Pa.
Norton & Jackson, Tidioute, Pa.:
Harry Heard, West Hickory, Pa.

O

Sarah C. O'Hara, 218 E. North St., Butler, Pa.:
Leslie E. Riggle, Karns City, Pa.
Ohio Oil Co., Findlay, Ohio:
E. B. Charlton, Louisiana district, Shreveport, La.
John Denton, Illinois (south) district, Bridgeport, Ill.
J. R. Thorpe, Illinois (north) district, Robinson, Ill.
Burr Farr, Grass Creek district, Grass Creek, Wyo.
George Sowards, Salt Creek district, Casper, Wyo.
H. T. Henton, Lance Creek district, Casper, Wyo.
Nathan Trodgen, Rock River district, Casper, Wyo.
Oil & Gas Co., The, Second St., St. Marys, W. Va.:
W. O. Wells, Harrisville, W. Va.
Oil State Gasoline Co., 424 S. Cheyenne, Tulsa:
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C. W. Stepp, Yale, Okla.
Orfic Gasoline Production Co., National Bank of Commerce Bldg., Tulsa:
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C. Cutting, Desdemona, Tex.
Owens, Libbey-Owens Gas Dept., Nicholas Bldg., Toledo, Ohio:
Dr. O. Fischer, geologist.
W. B. Strong, chief engineer.

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J. H. Dunwoody, Drawer Z, Ventura, Calif.
Fleary Pack, Drawer 86, Goleta, Calif.
Charles M. Denham, chief engineer.
Pala Oil Co., Inc., 908 McNeil St., Shreveport, La.:
C. P. Hanlen, Mooringsport, La.
Palmer Corp. of Louisiana, City Savings Bank & Trust Co., Shreveport, La.:
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William Harmon, Box 309, Sedan, Kans.
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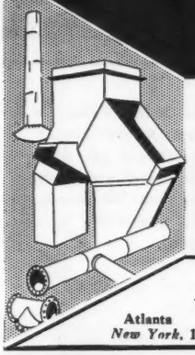

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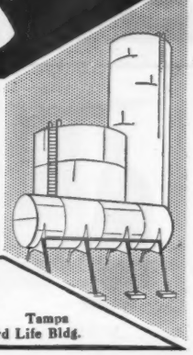

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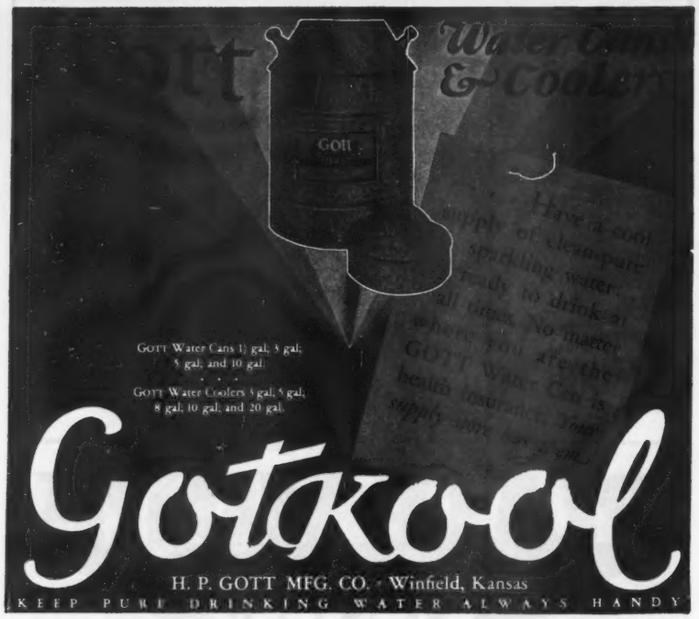
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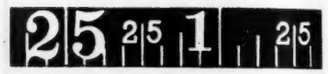


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Lewis Snyder, Box 787, Seminole, Okla.
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Paul H. Zook, Kane, Pa.
Southland Gasoline Co., 417 W. Sixth St., Tulsa:
W. A. Waters, Oilton, Okla.
W. A. Waters, chief engineer.
South Penn Oil Co., Chamber of Commerce, Pittsburgh, Pa.:
W. K. McCray, Parkersburg, W. Va.
C. B. McClintock, Oil City, Pa.
South Plains Pipe Line Co., Independence, Kans.:
John S. Legate, Amarillo, Tex.
Southwest Production Co., 121½ W. Seventh St., Bristow, Okla.:
B. E. Bond, Bristow, Okla.
B. E. Bond, chief chemist and chief engineer.
Star Gasoline Co., 408 Berryhill Bldg., Sapulpa, Okla.:
M. F. Phillips, Morris, Okla.
M. F. Phillips, chief engineer.
State Gasoline Corp., 900 Spring Arcade Bldg., Los Angeles, Calif.:
K. G. Steinback, R.F.D. 1, Box 240, Long Beach, Calif.
St. Helens Petroleum Co., Ltd., 1026-38 Western Pacific Bldg., Los Angeles, Calif.:
C. Z. Webb, Box D, Pico, Calif.
Stranahan & Cheuvront:
J. F. Brown, Oblong, Ill.
Superior Oil Corp., Exchange Bldg., Tulsa:
C. C. Laidley, Box 1911, Tulsa.
P. P. Pratt, Box 598, Earlsboro, Okla.
Swiss Oil Corp., Morriss Bldg., Lexington, Ky.:
Forrest Clarkson, Fixer, Ky.

T

Texas Pacific Coal & Oil Co., Fort Worth, Tex.:
D. Hiatt, Thurber, Tex.
E. W. Fubler, chief chemist.
H. Pruitt, chief engineer.
Tidal Refining Co., Philcade Bldg, Tulsa:
R. S. Stanfield, Drumright, Okla.
W. L. Tinsley, Glenpool, Okla.
W. A. Harrison, Ocheleta, Okla.
M. D. Harris, chief engineer.
Tidal-Western Oil Corp., Philcade Bldg., Tulsa:
D. J. Carey, Burkburnett, Tex.
Tiger Mountain Oil Co., 802 Thompson Bldg., Tulsa:
La Van Warren, Box 368, Okmulgee, Okla.
The Texas Company (Delaware), Houston, Tex.
M. J. Adams, North Texas division, Wichita Falls, Tex.
T. F. O'Brien, West Texas division-New Mexico division, Cisco, Tex.
J. L. Shea, Louisiana-Arkansas division, Shreveport, La.
C. C. Kelly, Oklahoma-Kansas division, Tulsa.
Transcontinental Oil Co., Thompson Bldg., Tulsa:
B. A. Whitney, Tulsa.
George C. Ellington, Bristow, Okla.
W. S. Sanders, Morris, Okla.
H. R. Herman, Haskell, Okla.
R. J. Black, Nowata, Okla.
Tyler Oil Co., Wells St., Sistersville, W. Va.:
Frank Burns, R.F.D. 1, Fly, Ohio.
Walter Phillips, R.F.D., Middletown, W. Va.

U

Union Gasoline Co., Commerce Natl. Bank Bldg., Independence, Kans.:
John D. Copeland, Caney, Kans.
F. L. Rupp, chief engineer.
Union Gas Products, Inc., 710 Ouachita Bank Bldg., Monroe, La.:
W. B. Matthews, Swartz, La.
H. C. Walton, chief chemist.
Jesse Hare, chief engineer.
Union Oil Co. of California, 617 W. Seventh St., Los Angeles, Calif.:
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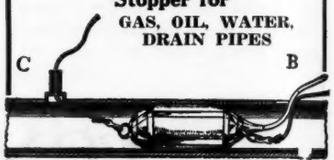


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F. N. Rutherford, chief engineer.

V

Viking Gasoline Corp., Peoples Bank Bldg., Charleston, W. Va.:
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Vollwin Gasoline Co., 1325 Glenarm St., Denver, Colo.:
R. B. Calvert, Ranger, Tex.

W

Ward Gasoline Co., Box 108, Breckenridge, Tex.:
H. Cornett, Box 1406, Breckenridge, Tex.
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G. M. Ford, Box 101, Peckham, Okla.
West Coast Refining Co., Pacific Finance Bldg., Los Angeles, Calif.:
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Wilcox, H. F., Oil & Gas Co., Wilcox Bldg., Tulsa:
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J. D. Hill, Bristow, Okla.
J. A. Berry, Pampa, Tex.
Wright, J. H., estate, 1700 S. Main St., Sapulpa, Okla.:
A. B. Nigh, Kellyville, Okla.

## PHOENIX ENLARGES SCOPE

Announcement is made by Edward N. Gosselin, president of the Phoenix Manufacturing Co., Joliet, Ill., that it has purchased and taken over from the Graver Corp. its steel tank, water-treating and steel plate construction business, including the plant in East Chicago, Ind. The Phoenix company will operate this plant and business under a wholly owned subsidiary company to be known as Graver Tank & Manufacturing Corp. The Graver Corp., under the management of the Graver family, has been in the tank and steel plate construction business for over 50 years. The Graver brothers will join the new interests as part of the official family. The new organization is already planning additions and improvements. The plant in East Chicago has a fabricating capacity of over 40,000 tons of steel per year. The Phoenix Manufacturing Co. at its three plants in Catasauqua, Pa., Montreal, Canada, and Joliet has a capacity of over 30,000 tons of iron and steel products per year. The new company will maintain branch sales offices in Chicago, New York, Dallas, St. Louis, San Francisco and other large centers. The general offices will be in East Chicago. The officers of the Graver Tank & Manufacturing Corp. will be as follows: President, Edward N. Gosselin; vice president and general manager, F. C. Everitt; secretary and treasurer, R. E. Meyer; vice president in charge of sales, P. S. Graver; vice presidents, W. F. Graver and H. S. Graver. The Graver Corp. will continue its activities in connection with engineering, designing and selling of oil refinery equipment and the members of the Graver family will retain their pecuniary interest in the older organization.

## FOREMOST GAS EXTENSION

CHATHAM, Ontario, May 17.—Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary is completing a regulator station at Foremost, Alta., and has secured right of way and is unloading pipe for the extension of its lines to serve that town.


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